ENGINEERING NEWS-RECORD

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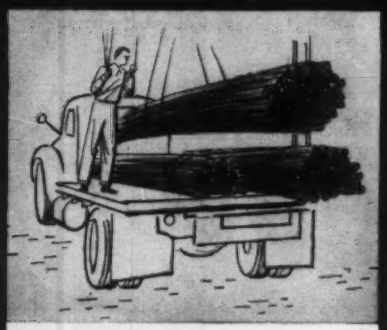
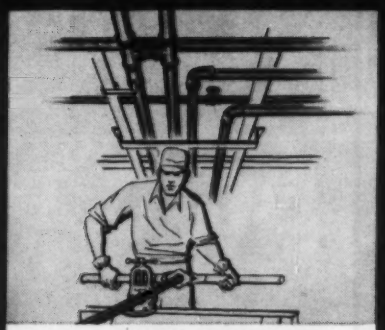
A McGRAW-HILL PUBLICATION



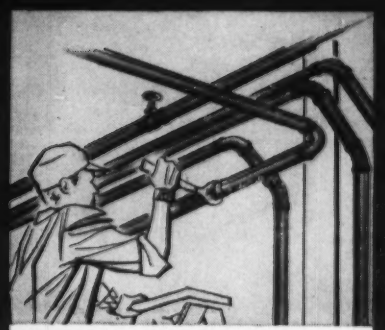
1. Cost of Pipe

The important thing about this cost is that it represents only *one small part* of the piping picture and should not establish the only pipe comparison guide.



2. Cost of Installation

This cost generally represents the *major part of the piping investment* and includes labor, fabrication, valves, fittings, covering, and overhead.



3. Cost of Maintenance

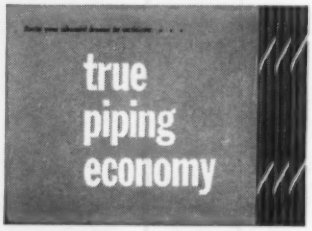
This is the money paid to keep the piping system in operation as long as the need for it exists. The amount spent depends largely on the quality of pipe used.

3 IMPORTANT COSTS THAT SHOW WHY WROUGHT IRON PIPE PROVIDES TRUE PIPING ECONOMY

This breakdown of piping system costs underscores the reasons why wrought iron pipe users enjoy maximum piping economy even though they pay more, *initially*. These users know that they buy an *installed piping system*, not just the pipe. And because the greatest cost of this installed piping system is in labor, valves, fittings, fabrication, covering, and overhead, the difference between the cost of the wrought iron installation and what a low-first-cost pipe installation would have been, shrinks to an insignificant amount in the cost of the *total piping contract*.

But still more important to the plans and pocketbooks of wrought iron pipe users is the Cost of Maintenance. One user put it this way. "A wrought iron installation is like having money in the bank." He was simply expressing wrought iron's longer service in terms of money saved in repairs, replacement, and maintenance. There's no doubt about it . . . when you consider the three costs, you can buy the best—wrought iron—and get a bargain at the same time.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. International Division: New York, N. Y. *Available throughout the world.*



Write for Booklet

The booklet, *True Piping Economy*, gives detailed information on the cost facts presented here, plus many others. You will find it a valuable guide in placing pipe selection emphasis where it will profit you most.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY STEEL PRODUCTS

NEW DITCHER

reduces the cost of narrow trenches

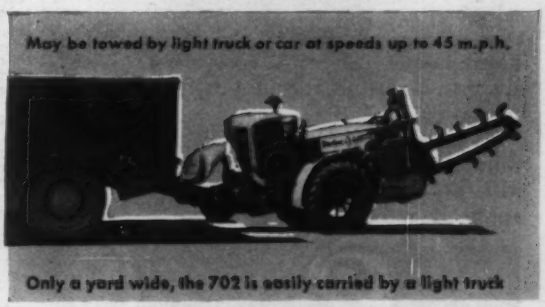
Built to "take it," this new, low-cost ditcher has the same rugged construction which has always characterized the famous line of Barber-Greene Ditchers.

No longer can hand digging be economical, even for the smallest job. The Model 702 is the fast, low-cost answer to trenching for gas, water, electric and telephone house services . . . for lawn sprinkler systems . . . small building foundations . . . for every kind of underground wiring including cables for power . . . telephone . . . traffic and R. R. signals . . . street and airport lighting.

The 702 is the ideal machine for the small contractor, and an excellent supplementary machine for larger users. This new Barber-Greene will do many jobs that normally would tie up heavier, more expensive, less portable equipment.

Condensed Specifications

40" boom digs 2½" or 5" wide • 30" boom digs 2¼" or 4½" wide • Quick width change • Infinite crowding speeds through Varidraulic Drive • Travel speed: 0-225 ft. per min. • Undercuts sidewalks • Dual Controls



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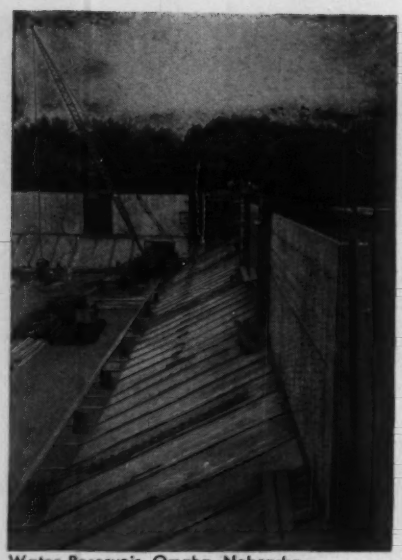
cost studies . . . nearby job inspection . . . plant layouts

Barber-Greene

AURORA, ILLINOIS, U.S.A.

BG

CONVEYORS . . . . . LOADERS . . . . . DITCHERS . . . . . ASPHALT PAVING EQUIPMENT



Water Reservoir, Omaha, Nebraska
De Buse Bros., Form Erectors.

Symons Forms for Battered Walls

Battered walls are constructed similar to vertical walls, the only difference being a variation in tie lengths. Ties are placed when inside form is erected . . . outside wall is locked to ties with the same connecting bolts and wedges that bind panels together.

Symons Forms are adaptable to commercial, industrial, institutional and public works construction jobs. Symons Service includes the details of a forming job from start to finish. Our engineering staff is experienced with all types of forming and our salesmen are trained on form erection, pouring and stripping methods. Form layouts and job cost sheets are provided upon request without charge or obligation.

Symons Forms, Shores and Column Clamps may be rented with purchase option, all rentals to apply on purchase price.

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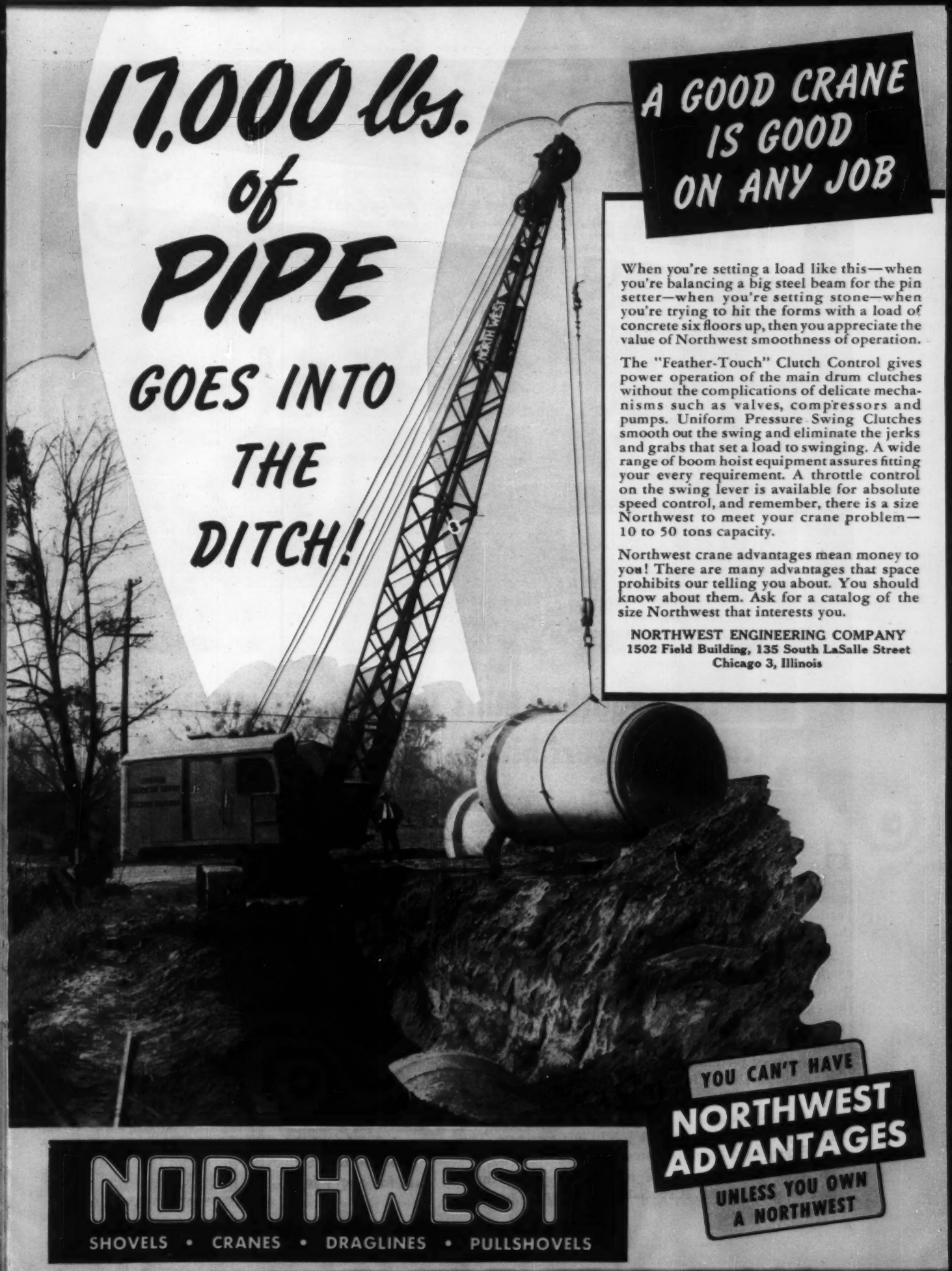
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PIPE
GOES INTO
THE
DITCH!
A GOOD CRANE
IS GOOD
ON ANY JOB
When you're setting a load like this—when you're balancing a big steel beam for the pin setter—when you're setting stone—when you're trying to hit the forms with a load of concrete six floors up, then you appreciate the value of Northwest smoothness of operation.
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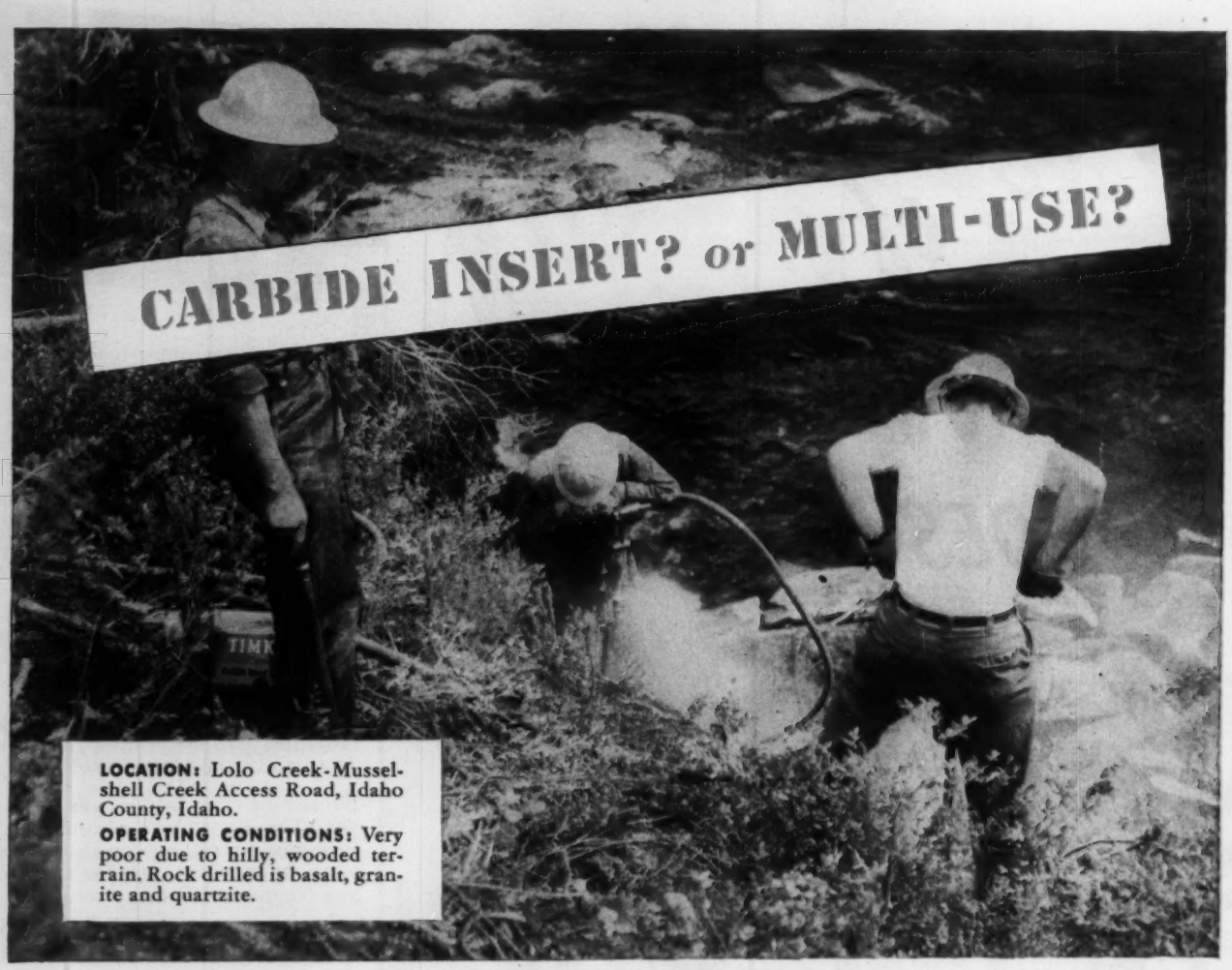

CARBIDE INSERT? or MULTI-USE?
LOCATION: Lolo Creek-Mussel-shell Creek Access Road, Idaho County, Idaho.
OPERATING CONDITIONS: Very poor due to hilly, wooded terrain. Rock drilled is basalt, granite and quartzite.

Twin Feather Mills Inc. chose TIMKEN® carbide insert bits for tough job on Idaho access road

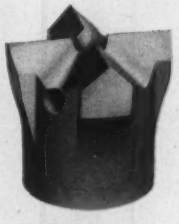
HERE'S a tough drilling job in anyone's book. The project: a thirty-mile access road to reach rich timber lands. The terrain is hilly and wooded and blast holes must be drilled into basalt, quartzite and granite. Twin Feather Mills Inc. chose Timken® carbide insert bits for the job.

Timken carbide insert bits are most economical for small-diameter blast holes, constant-gauge holes, and very deep holes. And they're your best bet for highest speed through hard and abrasive ground.

For drilling in ordinary ground, you get the biggest savings with Timken multi-use rock bits. With correct and controlled reconditioning, they give you lowest cost per foot of hole when full increments of steel are drilled.

Both types of Timken rock bits are interchangeable on the same steel. Dozens of different bits fit the same steel! Drillers can change bits on the job in just a minute. The need for large stocks of drill steels is eliminated.

All Timken rock bits are made of electric-furnace Timken fine alloy steel. A special shoulder union protects threads from drilling impact. For help in choosing the best bit for your particular job, call on the Timken Rock Bit Engineering Service. There's no obligation. Write The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".



Timken threaded multi-use rock bit

Timken threaded Carbide insert rock bit

your best bet for the best bit ... for every job

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QUICK INSTALLATION OF AMVIT JOINTED CLAY PIPE SOLVES SEWER PROBLEM FOR CAMDEN, N. J.

City Engineer
George Rogers

Assistant City Engineer
John Morgan

Contractor
C. & T. Affiliates, Inc.
John B. Kelly, President

New Amvit Jointed Clay Pipe saved considerable time and money for Camden, New Jersey.

The installation of this 15-inch sewer was done quickly and easily. The pipe was delivered ready for the ditch with the Amvit joint "built-in".

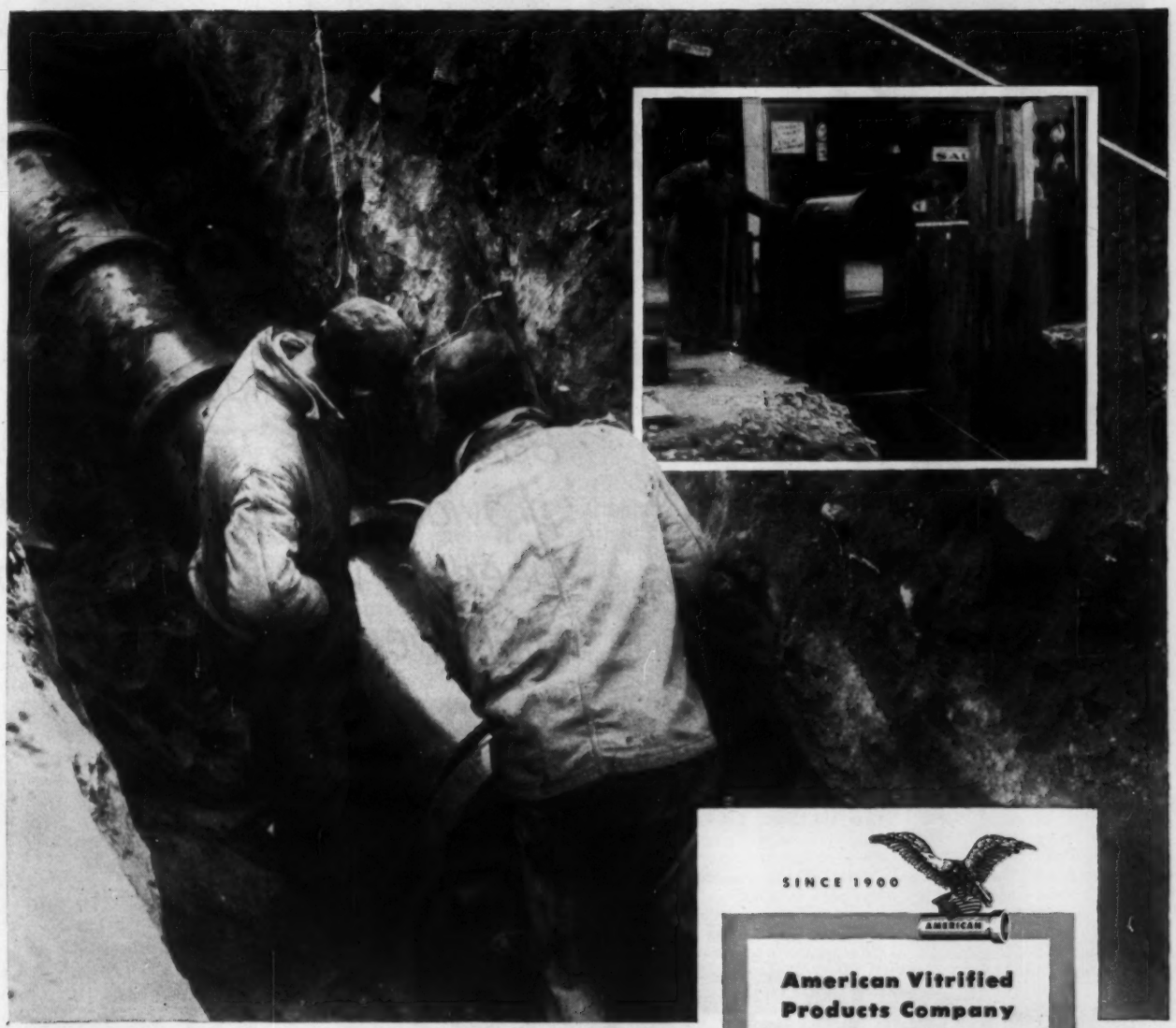
When the pipe is "pushed" together, the joint is in constant compression. Water cannot force its way in or out. Because this joint is flexible, immediate backfilling was possible.

Cut costs of *installed* pipe. Prevent costly infiltration. Stop pumping and treating thousands of gallons of ground water.

Specify easy-to-install, permanent Amvit Jointed Vitrified Clay Pipe.

Amvit Jointed Clay Pipe is just one of the many products manufactured in our plants across the nation. American Vitrified Products Company also produces concrete pipe, clay pipe, liner plates, flue liners and wall coping—both glazed and unglazed.

For more information, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you.



The Amvit joint is made of a new acid resistant plastic material with rubber characteristics. Like the pipe, the joints will not be harmed by any condition of underground service. The pipe is simply pushed together. The trench is then ready for backfilling.

SINCE 1900

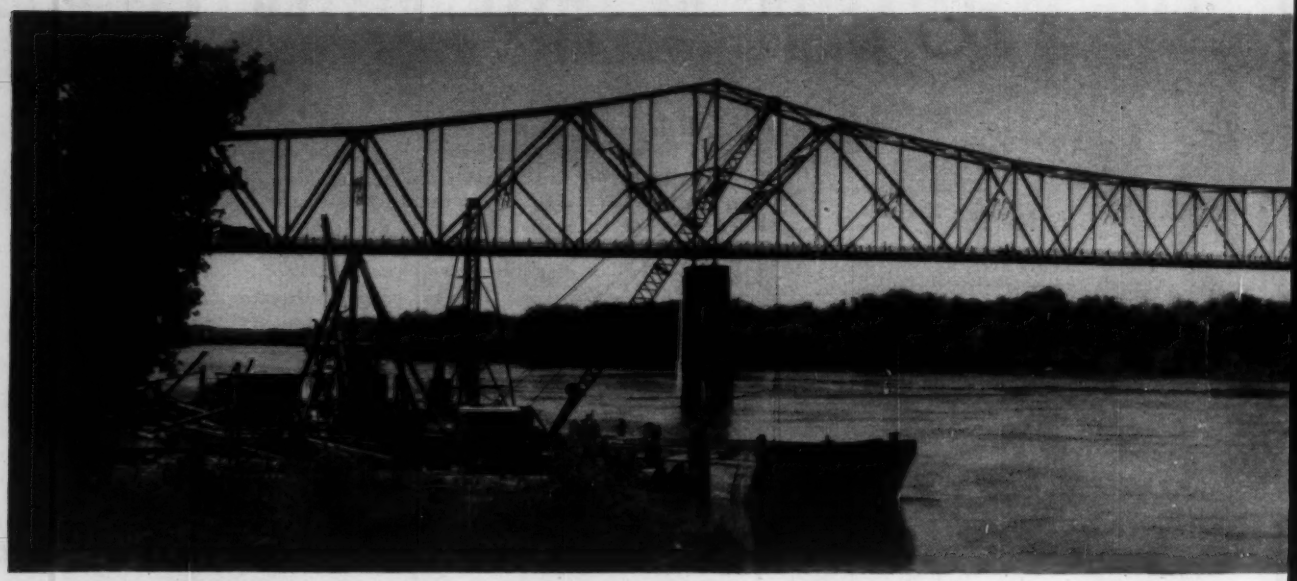
AMERICAN

American Vitrified Products Company

CLEVELAND, OHIO

Patent Pending

Plants Across the Nation... Brazil, Indiana • Chicago, Illinois • Cleveland, Ohio • Crawfordsville, Indiana • Detroit, Michigan • East Liverpool, Ohio Fenton, Michigan • Grand Ledge, Michigan • Lisbon, Ohio • Los Angeles, California • Milwaukee, Wisconsin • South Bend, Indiana • Uhrichsville, Ohio



Tough engineering problem

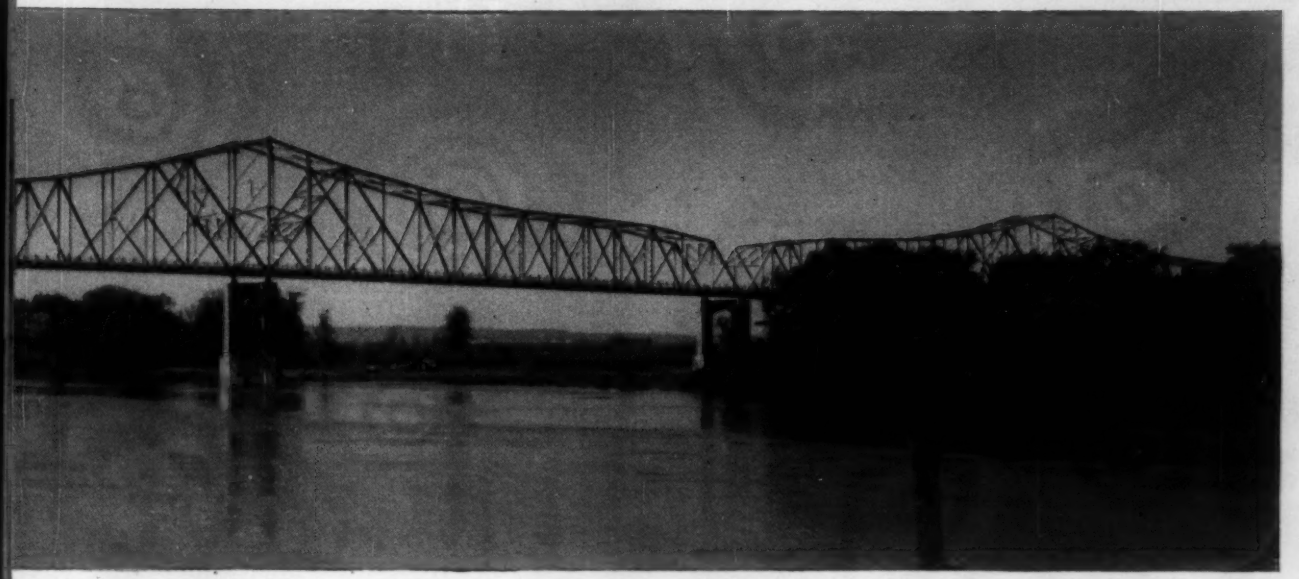
When adoption of a heavier floor increased dead load 864 tons, USS TRI-TEN Steel provided the extra strength needed with no increase in steel weight.

Crossing the Illinois River on F.A. Route 4 at Beardstown, Ill., this recently completed highway bridge is 3655 feet long, carries a 26 foot roadway. It is typical of the growing list of bridges in which USS High Strength Steels—USS TRI-TEN, USS TRI-TEN "E," USS MAN-TEN and USS COR-TEN—are being used to provide maximum strength, safety and durability with a minimum of weight and cost. Are you familiar with this big step forward in modern bridge construction?

Built by Illinois Division of Highways
(R. R. Bartelsmeyer, Chief Highway Engineer)

Structural steel fabrication by
Allied Structural Steel Companies
Chicago, Illinois

Erection by Industrial Construction Company,
Minneapolis, Minn.



solved by switching to

USS High Strength Steel

Here's a case history that every bridge designer could profitably remember when designing his next bridge. It shows how *high strength* steel gave the engineers on this job an easy way out of a difficult situation, one that you too may face some day.

The original design of this recently completed bridge across the Illinois River at Beardstown, Ill., called for ASTM A7 structural carbon steel in the superstructure trusses, girders and floor system. Open-grid steel flooring was originally specified for the roadway.

However, after work on the bridge had started, it was decided to use a solid floor on the truss spans . . . concrete-filled road slabs that added approximately 39 lbs. per square foot, which meant a total of 864 tons dead load added to the truss superstructure.

Ordinarily such a change would have required a complete redesign of the superstructure as well as the foundations—but the latter were already built and therefore could not be strengthened. Here was a pretty dilemma.

The engineers found a simple and economical solution by switching to USS TRI-TEN (A-242) Steel which provides a minimum yield point 1.52 times that of structural carbon steel. By substituting TRI-TEN (A-242) Steel in the exact size and weight of the original carbon steel members affected by the increased road slab load, costly changes in connections were made unnecessary and the extra strength needed was amply provided.

550 tons of USS TRI-TEN (A-242) Steel were used in this switch-over to a stronger—and more durable—construction. Had carbon steel been used, it is estimated that 730 tons of steel would have been needed to obtain the strength required.

NOW AVAILABLE . . . Our new "Design Manual for High Strength Steels" is ready for distribution. This excellent book contains comprehensive and practical information that you will find extremely useful in designing your product for great economy and efficiency by the sound use of high strength steels.

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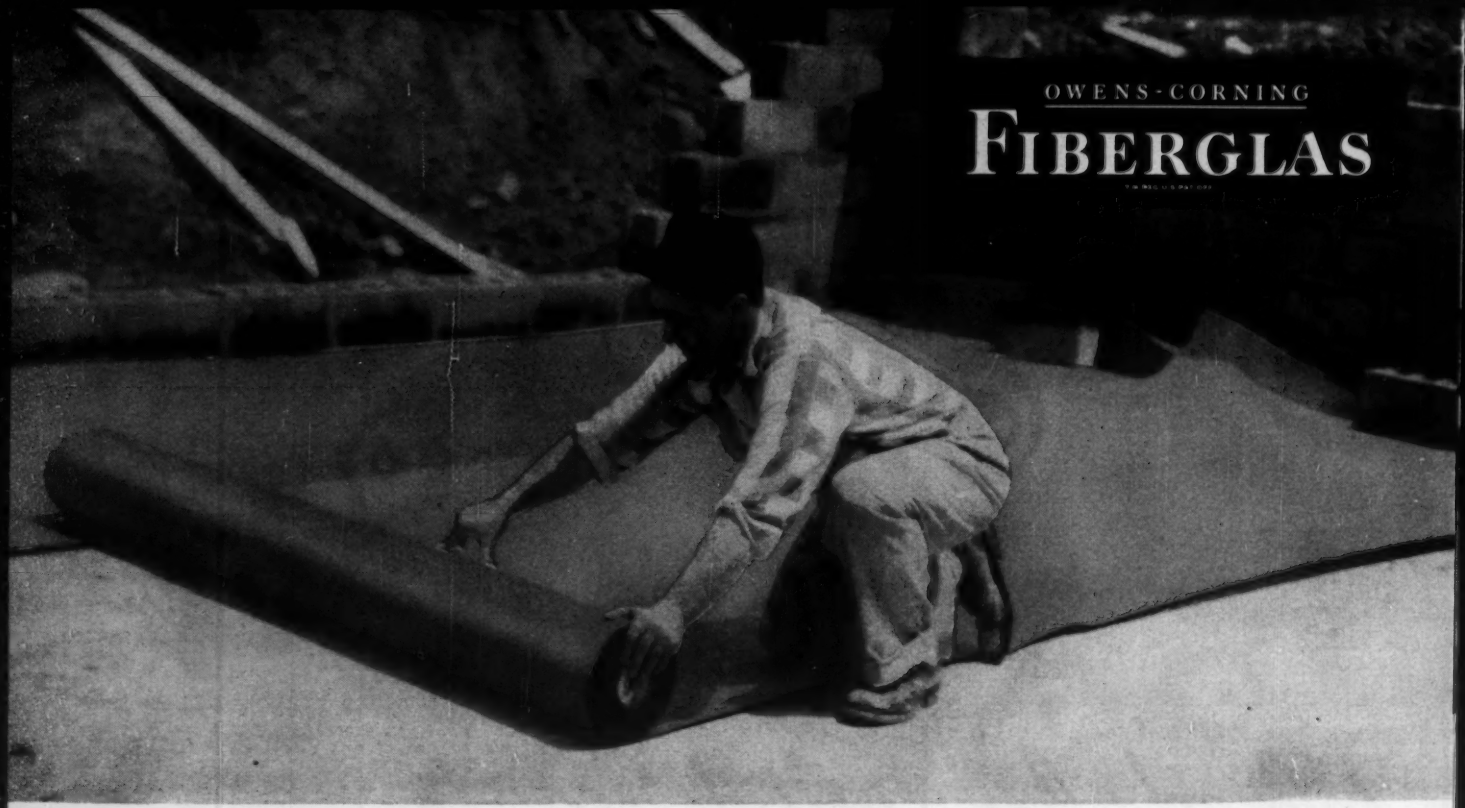
USS

UNITED STATES STEEL



DOWN IN A JIFFY GOES LOW-COST FIBERGLAS-REINFORCED WEATHERPROOF PAPER FOR A FIRST-CLASS JOB OF CONCRETE CURING

NEW BOON TO BUILDING BOOM

Fiberglas-reinforced weatherproof papers do dozens of jobs cheaper, better

Two simple facts explain the great and growing use of Fiberglas*-reinforced weatherproof papers throughout the booming construction industry.

First, their Fiberglas reinforcing filaments impart a combination of strength, moisture resistance, tear resistance and durability found in no other filament papers. These filaments will not absorb or conduct moisture. They're stronger, ounce for ounce, than any other type of reinforcement. And they're rot-proof, vermin-proof and resistant to oils and acids.

Second, Fiberglas-reinforced weatherproof papers cost no more than ordinary filament papers.

Leading builders now use Fiberglas-reinforced weatherproof papers for everything from ridge flashing to floor vapor barriers, concrete curing to sheathing protection.

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*T.M. Reg. O-CF Corp.

PERFECT CURING gives America safer, more durable concrete roads and highways. To date, thousands of miles from coast to coast have been cured with Fiberglas-reinforced weatherproof papers.

PURE COPPER COATING makes this Fiberglas-reinforced paper ideal for all concealed flashing. Fiberglas filaments impart high strength, block out vermin and rodents, resist rot and moisture.

W. E. Logan & Sons, Muskogee, Oklahoma

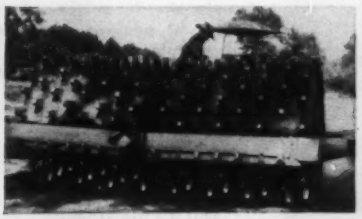
"4 years before overhaul with Cities Service lubricants!"

Builders of dams, airports, and a large percentage of the roads in Oklahoma, W. E. Logan & Sons use as many as 84 pieces of equipment on one job at one time.

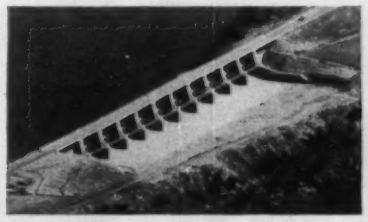
Says Logan's Master Mechanic, Charlie Wills, "Often we have as many as four major road jobs going at once, and we average 240 hours a month on every piece of equipment we've got, year around."

Grueling work? You bet! And for the last 20 years Logan has relied on Cities Service to help get that work done. Here's the balance sheet: Using Cities Service C-300 Motor Oil, Trojan Greases, and Trojan MP-140 Gear Oil, Logan's D-8 Cats run four to five years before major overhaul. After four years, bearing inserts are worn less than .003 inches, liners less than .007 inches. In addition, Trojan MP-140 Gear Oil has kept gear cases so free of sludge that after five years, paint inside the cases is "perfectly clean."

That's only part of Logan's story. But it's mighty important—and it may become part of your story when you start using the Cities Service line of highest quality petroleum products. Learn the whole profitable story. Contact your nearest Cities Service representative or write: Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.



Machines, machines, and more machines! W. E. Logan & Sons uses as many as 84 pieces on a single job, all Cities Service fueled and lubricated. Many use Cities Service Hydraulic Oils, too.

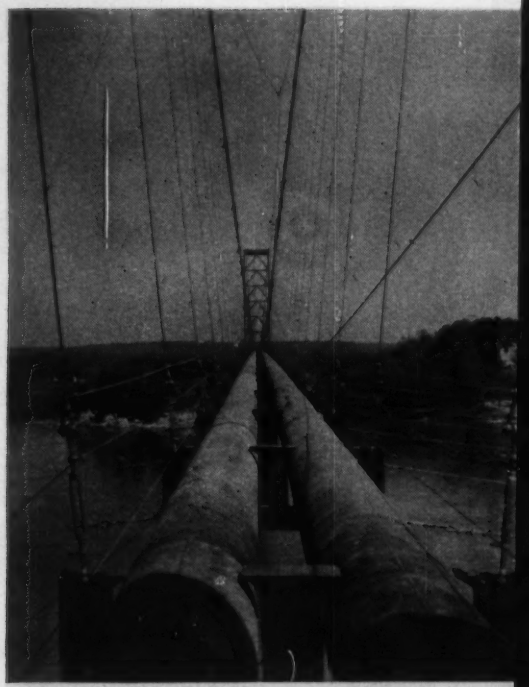


The Tenkiller Ferry Dam Reservoir in Oklahoma was one of Logan's biggest jobs. An earthen dam, it required moving 10,809,580 yards of earth, took 3 years to complete.

And always close by—Cities Service. For the past 20 years, wherever there's been a piece of Logan equipment at work, Cities Service Lubricants have been at work too.

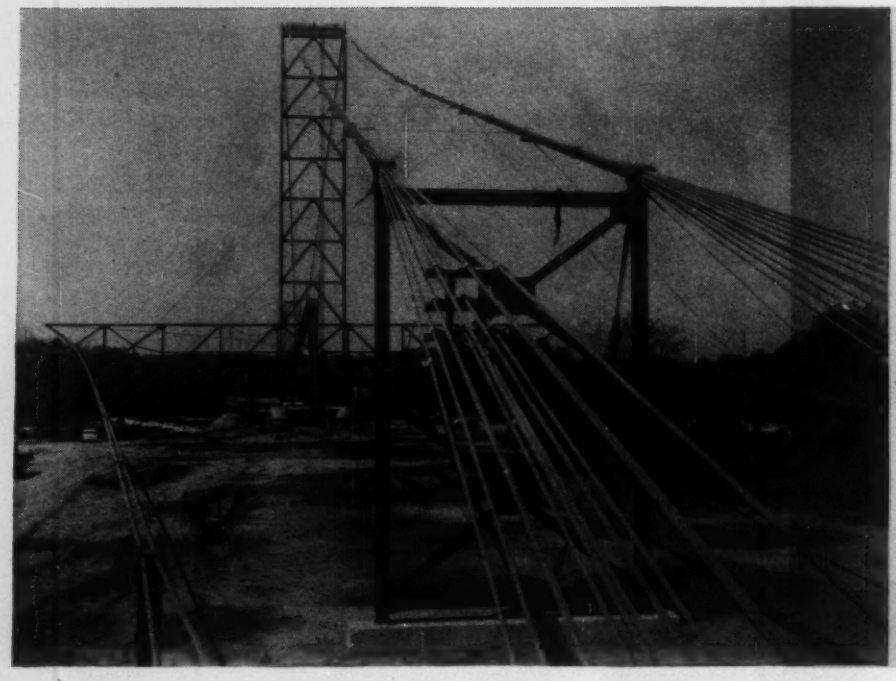
CITIES SERVICE

QUALITY PETROLEUM PRODUCTS



The supporting cable network consists of 174 main cable suspenders (vertical), 61 main cable horizontal ties, 170 wind cable horizontal guy suspenders, 168 wind cable inclined suspenders and 44 wind cable inclined suspenders in backstays. Most of these are Tiger Brand 5/8" strand with four 3/4" strands at the towers.

TEXAS ILLINOIS GAS jumps the Mississippi on World's Longest Pipeline Suspension Bridge



Two main cables of open type support the pipelines. Each cable consists of twelve 2" dia. Tiger Brand Wire Ropes, prestressed to eliminate stretch, galvanized for long life. In addition, there are two wind cables, each of two 2 3/8" dia. prestressed and galvanized wire ropes.

Quick Facts
ABOUT THE BRIDGE
Owner: Texas Illinois Natural Gas Pipeline Company
Engineers: Matthews & Kenan, San Antonio, Texas
Associate Engineers: Mitchell & Hunt, San Antonio, Texas
Superstructure Contractor, Fabricator and Erector:
American Bridge Division, United States Steel Corporation
Wire Rope Manufacturer: American Steel & Wire Division, United States Steel.
Total Length: 3,690-feet. Main Span length 2,150-feet.
Towers: 246-feet high x 40-feet wide.
Wind load: 27 lbs. per sq. ft. on circular and convex surfaces,
40 lbs. per sq. ft. on flat surfaces.
Ice load: 107 lbs. per lineal foot on main cables.

It took 445 tons of Tiger Brand Galvanized Bridge Rope and fittings to build this 3,690-foot bridge carrying two 30-inch gas pipelines across the Mississippi River.

The Mississippi River has been rough on pipelines laid across its bottom. Some have been undermined and washed out, disrupting service. To prevent situations like this, the Texas Illinois Natural Gas Pipeline Company has built the first pipeline suspension bridge across the Mississippi River near Grand Tower, Illinois.

The bridge has a main span of 2,150-feet and measures 3,690-feet from anchor to anchor. The main towers extend 246-feet above the concrete supporting piers and the pipeline, at the center span, will be some 75-feet above the highest recorded level of the river at that point. Actually, it will average about 110-feet above the normal height of the river.

This pipeline bridge which will aid in the distribution of Texas gas to Chicago, Illinois, represents some of the world's finest engineering in the design, manufacture and application of wire rope. One of the most difficult jobs in building the bridge was adjusting the cables in the high winds of early spring. The successful completion of the job is a tribute to the cooperation of all those involved.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO - TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

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USS

UNITED STATES STEEL

Why BRIXMENT IS WATERPROOFED

Brixment is waterproofed during manufacture, with the most effective air-entraining, water-repelling agent known.

The fact that Brixment is waterproofed can be demonstrated by making the crater test shown in Figure 1. Brixment's *effectiveness* in preventing the passage of water through the mortar can be demonstrated by making the test shown in Figure 2.

* * * * * *

Waterproofed Brixment gives you three practical benefits which are not available in ordinary cement-and-lime mortars:

1 HELPS PREVENT LEAKY WALLS

Even under pressure, water cannot readily pass through Brixment mortar. Therefore, if the face brick are back-plastered with Brixment mortar, a barrier is set up against the passage of water to the inside of the wall.

2 GREATLY INCREASES DURABILITY

Water cannot readily penetrate Brixment mortar. This prevents the mortar from becoming saturated — therefore helps protect it from the destructive action of freezing and thawing to which it is subjected many times each winter.

3 HELPS PREVENT EFFLORESCENCE

Waterproofed Brixment mortar checks the passage of water and keeps it from percolating down through the wall, dissolving salts which may be in the masonry materials, and carrying them to the surface.

Louisville Cement Co., Louisville 2, Ky.

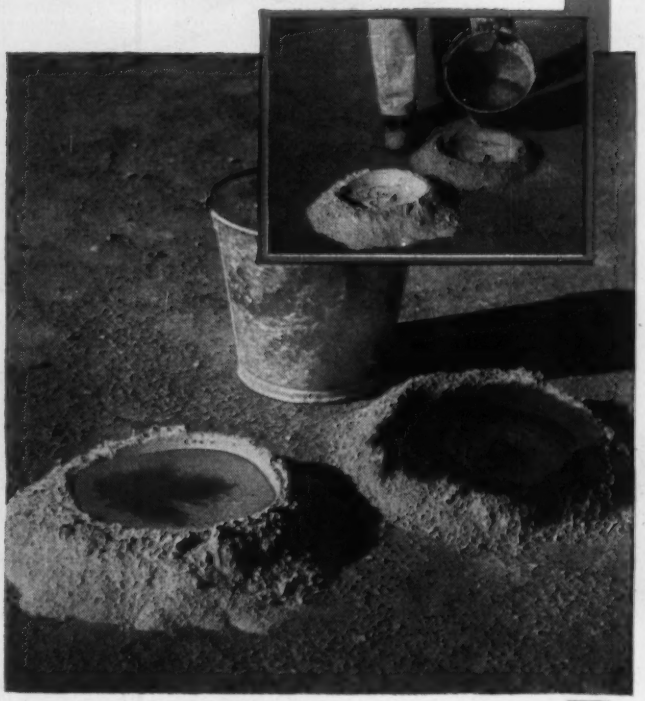


FIGURE 1

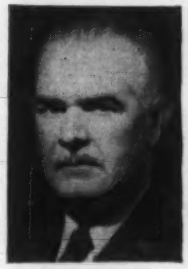
Pour out a pile of Brixment and a pile of ordinary cement and lime. Make a crater in the top of each pile. Fill each crater with water. Note how the cement-and-lime mixture absorbs the water immediately. Note how the waterproofed Brixment *holds* it.

FIGURE 2

Prepare two slabs of mortar, one with Brixment and one with ordinary lime-and-cement mortar. After mortars have hardened, seal a lamp chimney to each of the mortar slabs, using wax or candle grease, and fill with water.

After 24 hours, note how much water has gone into and through the non-waterproofed mortar, and how little water has gone into or through the Brixment mortar.

READER COMMENT



Gen. Talley

Gen. Tulley

Question of a Vowel

SIR: Either I'm seeing things or your Editor in charge of "Men and Jobs" Section of ENR was confused by the similarity of names and pulled the wrong photo from the "Rouge's Gallery" but, having had lunch with Brig. Gen. David H. Tulley just this week, it would be mighty hard to convince me that it wasn't his likeness used for the story on Brig. Gen. B. J. Talley in June 23 issue of ENR.

Please tell me—Do I need a new pair of specs?

GUYTON KEMPTER
Delaware Water Gap, Pa.

[EDITOR'S NOTE: Your specs are fine —ours need adjustment. The Generals are identified correctly above.]

Dams With "Overhang" in U. S.

SIR: I read with interest the article on French hydroelectric dams (ENR June 30, 1955, p. 34). In this article you refer to "boldness in design," "world's thinnest dam" and "overhanging arch" to describe some of these dams, with inference that these are new techniques of design. If, however you will refer to copies of Engineering News-Record around 1929 and 1933, you will find articles describing dams designed by my father, the late James B. Girand, consulting engineer of Phoenix, Arizona, which embodied these same techniques.

In 1929 my father designed and constructed a dam for the Arizona Edison Co. on Frye Creek near Safford, Arizona. This dam had a downstream overhang of about 10 ft and, to the best of my knowledge was the first dam ever constructed with this feature. This overhang or hollow type of construction was not inspired by boldness of design but by the mathematical necessity of pushing the lower arches upstream in order to avoid upstream overhang at the abutments and at the same time obtain a theoretically

Here's how to Combine Simplicity and Economy in

Waste Treatment

Simplicity and relative economy sum up this unusual waste treatment installation for a large Southern paper mill. Primarily installed for suspended solids removal from general mill effluent, it is also doing a good job of B.O.D. reduction. The 300′ dia. Dorr Clarifier installed in an economical 500′ earthen basin removes approximately 90% of suspended solids . . . with a B.O.D. reduction of approximately 33%.

This Dorr Clarifier-earthen basin team is suited principally for use as a primary treatment unit. Additional treatment steps can be added as needed, without affecting the initial Clarifier installation.

If you have problems involving any phase of the separation of finely divided solids in suspension . . . or ion-exchange . . . or fluidizing techniques — chances are that Dorr-Oliver and its world-wide organization can help you.

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STAMFORD • CONNECTICUT • U. S. A.

New Optical Plummet Built into Gurley Transit Saves Set-up Time, Improves Accuracy on Windy Days

Instrument Available in Two Models with Shifting Heads

Years ago, Gurley introduced lightweight instruments to combat wind vibrations. Now Gurley further beats the wind problem with an optical plummet *built into* the instrument.

The new Gurley Optical Plummet Transit eliminates swing and sway of the cord and plumb—always time-consuming and exasperating on a windy location, and inaccurate as well. Positive accuracy of set-up is assured with the Gurley Optical Plummet.

Two types of shifting head are available: one, which uses the Gurley wide-frame tripod, is adjusted over the point—using a method similar to the theodolite...the other, featuring a slow-motion, two-direction cross-feed head, permits movement in two directions at right angles to each other without disturbing the level of the plate.

Gurley's new Optical Plummet Transit offers one of the advantages of the optical-reading theodolite *plus* the desirable features of simplicity and universal acceptance of the American transit. For further details, write for Bulletin OP-57.

GURLEY

W. & L. E. GURLEY Union Plaza, Troy, New York

Gurley—Since 1845

READER COMMENT

correct central angle of 132 deg. without thickening the abutments. When a dam is built in an extremely narrow and deep canyon, such movement of the lower arches in an upstream direction is patently required for proper design.

This Frye Creek dam was 110 ft in height and the arch thickness at the base was only 3 ft, which was the result of an unusually narrow canyon. The intrados radius of the lowest arch was about 11 ft.

In 1933 my father designed and constructed the Willow Creek arch dam for the Chino Valley Irrigation District near Prescott, Arizona. This dam was also about 110 ft high. The main arch had a downstream overhang of more than 15 ft, which was dictated by the same reasons as outlined above. The thickness of the bottom arch was about 5 ft.

This dam also embodied an arch type overflow spillway similar to that described in your article. It included splitter piers which extended above the high water level and contained channels for the admission of air between the nappe of the water and the face of the dam.

JAMES GIRAND
Chief Engineer
Elizabethtown Water
Company Consolidated
Elizabeth, N. J.

[EDITOR'S NOTE: Mr. Girand's father was indeed one of America's most famous and progressive dam designers, and it is helpful to have recalled one of his important contributions to progress.]

CALENDAR

Pennsylvania Sewage and Industrial Wastes Association, annual conference, Pennsylvania State College, Aug. 22-24.

American Society of Civil Engineers, hydraulics division, University of California, Berkeley, Calif., Aug. 24-26.

International Association for Hydraulic Research, 6th Plenary meeting, Delft, Netherlands, Aug. 29-Sept. 2.

New York Section, American Water Works Association, annual fall meeting, Saranac Inn, Saranac Inn, N. Y., Sept. 8-9.

Western Association of State Highway Officials, annual conference, Jackson Lake Lodge, Wyo., Sept. 8-10.

New England Water Works Association, Lake Placid Club, Lake Placid, N. Y., Sept. 18-22.

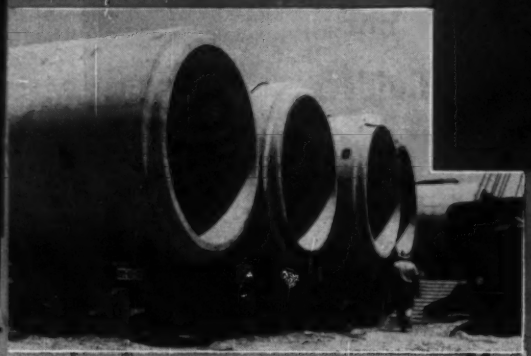
International Road Congress, Dolmabahce and Yildiz Palaces, Istanbul, Turkey, Sept. 26-Oct. 16.

American Public Works Association, congress and equipment show, Milwaukee, Wis., Oct 2-5.

Federation of Sewage and Industrial Wastes Associations, Ambassador Hotel, Atlantic City, N. J., Oct. 10-13.

Southwest Section, American Water Works Association, San Antonio, Tex., Oct. 16-19.

underground or underwater



Temporary trestle provides runway for gantry crane. Pipe sections are lowered into position through trestle.

AMERICAN'S REINFORCED CONCRETE PIPE OFFERS EQUAL ADVANTAGES IN PERMANENCE, ECONOMY AND EASE OF INSTALLATION

For an important second subaqueous installation at the Redondo Steam Station, Southern California Edison Company again chose American's 120" precast reinforced concrete pipe with rubber gasket joints. In the parallel intake and discharge lines, ocean water is circulated at an average flow of 400 second feet as part of the steam condensing system.

In addition to sustained hydraulic capacity, corrosion resistance and freedom from maintenance, this project demanded a pipe easy and accurate in placement with maximum joint flexibility. All of these requirements were amply and safely met with American's subaqueous pipe.

Whether your pipeline is to be underground or underwater, you'll find a class of American pipe designed and manufactured specifically to meet your needs. Take advantage of our 45 years of experience in water supply line engineering . . . write for any desired information to P. O. Box 3428, Terminal Annex, Los Angeles 54, California.

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Concrete pipe for main water supply lines, storm and sanitary sewers, subaqueous pipe lines.

Main Offices and Plant: 4635 Firestone Boulevard, South Gate, Calif., District Sales Offices and Plants: Hayward, Calif. · San Diego, Calif. · Portland, Ore. Mail Address: P. O. Box 3428 Terminal Annex Los Angeles 54, Calif. · Phone LOgan 8-2271

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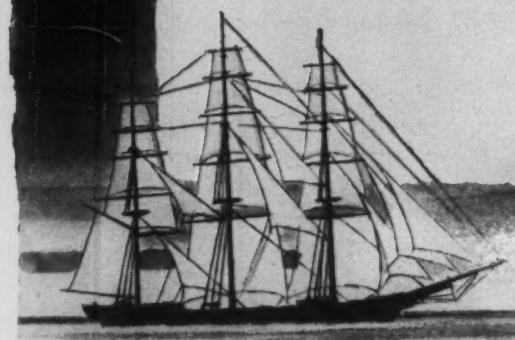
If you will put a Jenkins Valve, recommended for your particular service, on the worst place you can find — where you cannot keep other valves tight — and if it is not perfectly tight or it does not hold steam, oil, acids, water or other fluids longer than any other valve, you may return it and your money will be refunded.

Jenkins Bros



"A Fair Offer", first published in 1869, was more than a warranty of superior performance. It charted a course for fair dealing from which Jenkins Bros. has never veered.

By making valves that measure up to this forthright offer, Jenkins Bros. has continued to set the highest standards for quality.

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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

URBAN RENEWAL AID—Growing interest in urban renewal programs (ENR July 21, p. 21)—under which adequate code enforcement is a major qualification for federal aid—gives special significance to the South Carolina Supreme Court's decision upholding a strongly contested substandard housing ordinance in Columbia.

While the court invalidated what it considered certain discriminatory powers that gave the City Housing Commission the right to declare a dwelling unfit simply at the discretion of the rehabilitation director, it upheld provisions requiring that dwellings have inside running water with sink, and lavatory with bathtub or shower and toilet; adequate screens, windowpanes and windows; properly installed electric wiring; and weather-tight roofing.

10-YEAR MAPPING MISSION—The last picture necessary to complete an aerial photographic map of Canada has been taken by the Royal Canadian Air Force, ending a mission that has been in steady progress for 10 years. Much detailed mapping is still in progress but the work just completed by the RCAF will permit completion of ground maps to the standard international scales, in association with ground controls.

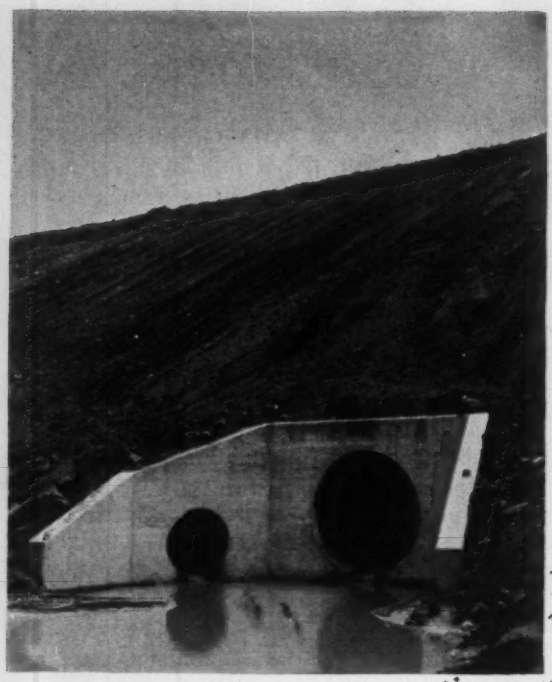
KEEP YOUR RECEIPT—As a result of a dispute over a contract award, Seattle's Board of Public Works has ruled that envelopes containing contract bids must be preserved for 10 days after an award has been made.

After Ace Construction Co. was awarded a $139,241 sewer project contract, an attorney for Frank Coluccio Construction Co., second low bidder at $150,504, expressed doubts that the Ace bid had been received by a 2 PM deadline.

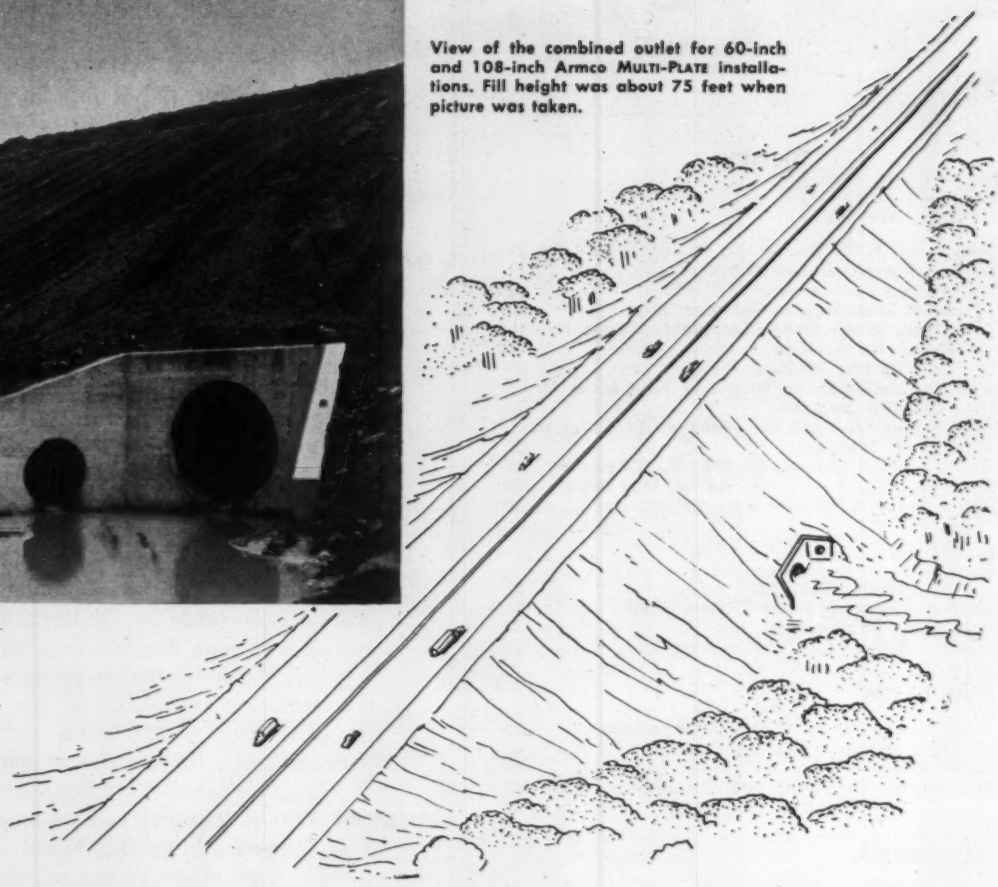
The envelope containing the bid had been stamped on a time clock but then destroyed. By questioning the clerk who stamped the envelopes, the board satisfied itself that the low bidder made the deadline. But, to avoid such difficulties in the future, the board wants to play safe by having the envelopes kept as a receipt.

HOT WEATHER PROBLEM—The Phoenix, Ariz. city council stirred up a unique controversy when it proposed a zoning ordinance change that would permit installation of refrigeration air-conditioning equipment in side yards—provided it was set back two feet from the property line.

The air-conditioning industry endorsed the council's proposal, maintaining that existing ducts in many homes would have to be remodeled extensively for back-yard installation. But, a host of homeowners don't see it this way, claiming the side-yard installations would put noisy equipment close to neighbors and thereby create a noise nuisance.



View of the combined outlet for 60-inch and 108-inch Armco MULTI-PLATE installations. Fill height was about 75 feet when picture was taken.



FLEXIBLE ARMCO PIPE HANDLES OHIO TURNPIKE'S HIGHEST FILL

The highest fill on the Ohio Turnpike—110 feet—is located just east of the Turnpike's highest bridge, crossing the Cuyahoga River. More than a quarter of a mile of Armco Corrugated Metal Structures carry drainage through this fill.

One line of 108-inch diameter Armco MULTI-PLATE Pipe runs 516 feet, directly under the Turnpike. A smaller pipe, 980 feet long, drains another area further east. This line runs diagonally through the fill to the same outlet.

Even under the tremendous earth load of high fills like this, Armco Corrugated Metal Pipe remains structurally sound. There is no danger of cracking or breaking. Thanks to flexible, corrugated metal design, loads are distributed around the entire periphery of the pipe instead of being concentrated top and bottom as with rigid pipe. Long service life is assured.

Armco Drainage Structures are available in a wide range of sizes, gages and shapes. It is easy to get the right structure to meet your specific needs. Write us for data. Armco Drainage & Metal Products, Inc., 3715 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario. Export: The Armco International Corporation.

ARMCO DRAINAGE STRUCTURES

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WASHINGTON OBSERVER

The rush for adjournment of Congress is taking its toll—a lot of legislation affecting construction will be delayed until next year as a result.

Upper Colorado: It is highly doubtful that the billion-dollar Upper Colorado water storage project will get to final action. The Senate has already voted the program, and the House committee has approved it, with the exception of the Echo Park Dam. But House members as a group are restive, and House leaders fear a vote on the proposal now would just about kill the program. So a holdover until next year is likely.

Frying-Pan-Arkansas is in a similar position. It is tied closely, politically, to Upper Colorado.

Trinity River will be held up by the rush for adjournment, too.

School Construction legislation made progress last week; the House Labor Committee voted out a federal grant-in-aid program. But, as previously reported, controversy over desegregation has blocked any real action in the Senate. The House committee left the issue alone, but southern senators do not feel that is enough. They fear they would be outvoted in a test.

Water pollution legislation is more optimistic. New legislation voted by the Senate would give broader authority to the federal government to step into a pollution problem. This week the House Public Works Committee approved a similar bill—giving the federal government authority to go to court against a stream pollution violator, with consent of the state in which the pollution occurs, or on request of a downstream state. Final action is still possible.

•

Air pollution research will get more money. Congress will finally decide on about $1.2 million.

•

Money to continue construction of the Inter-American Highway will be voted. The Senate Appropriations Committee was approved a $49,730,000 appropriation to complete the highway. A previous appropriation had allowed only $25 million. Under this program, almost certain to be adopted finally, the highway will be completed in three years.

•

The 1954 housing windfall drama will have a second-act curtain this week. The Federal Housing Authority is going to try to recapture the 2,112-unit apartment project, Shirley-Duke Apartments, in Alexandria, Va. The case involves $1.8 million which sponsors of the project received without approval of FHA, and $700,000 in what FHA says are illegal service charges to the lending corporation that financed the project.

•

There is renewed talk in the Administration to get standby housing controls. A decision still is to be made whether to make a last-minute request of the present Congress, or wait until next year. But legislation is being drafted to give the President authority to tighten credit terms if he sees an inflationary spiral threatening.

The legislation would hit FHA, and VA programs. The President could regulate minimum down payments, as well as lengths of mortgages. As of now, there is not provision proposed for regulating interest rates. This thinking stems from a general watchful waiting by Administration economists, who see the present housing construction levels as healthy, but want the President to be able to act if a spiral begins.

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Faster Operation • Higher Output • Better Profit

The CTES, 160-YD Erie Strayer Truck Mixer plant installed by Limestone Ready Mix Co. One-man operation with faster batching and higher output increased their profits—earned a repeat order for distributor, Industrial Tractor and Equipment Co., Nashville.

SLOW SERVICE to suburban users, and long, dead hauls posed a problem for Limestone Ready Mix Co., Nashville, Tenn. They licked it with an Erie Strayer Truck Mixer Plant, installed at Madison—seven miles from downtown Nashville.

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Mr. Petty names these Erie Strayer features as the reason for this satisfactory, fast service:

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6. **High output capacity.**

NEW ORDER UNDER WAY

Now Limestone Ready Mix is replacing their central plant in Nashville. James T. Wall, president, has specified an Erie Strayer Big Batch Plant. Like the Erie Portable, the Erie Big Batch Plant is soundly engineered. Both plants have the same fine features—only the size is different.

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Airport Aid Funds Due for Big Boost

President considers bill providing for four-year, $230-million expenditure

A measure that would provide $230 million of federal aid for civil airport construction over the next four years now is awaiting Presidential action.

Even if the President decides to veto it, Congress appears determined to push the bill through.

Its money provisions are in sharp contrast to the skimpy appropriations the Commerce Department is accustomed to asking for. During this fiscal year, the bill calls for $42 million in new grants, together with $20 million already appropriated in the Administration's budget. Grants totaling $63 million would be made in each of the following three fiscal years.

Localities now have more than $160 million available for matching federal funds, according to a Department of Commerce estimate. Eighty-nine communities have authorized bond issues for airport development amounting to $128 million. Bonds in the amount of $51.4 million have been sold by 53 of these communities. Another 20 of them have approved $26.5 million in bond issues that are contingent upon federal-aid funds.

And, there are 294 communities which have on hand, $33.8 million in airport funds from various sources.

• **On more solid basis**—A key feature of the new measure is that it obligates Congress to appropriate the money authorized, insuring definite amounts for each of the next four years as in the case of federal highway aid.

Heretofore, appropriations have been made on a year-to-year basis and have fallen far short of the authorizations. In 1946, for example, Congress passed a $500-million authorization but the Truman Administration had a difficult time getting annual appropriations and these were on a relatively small scale. The Eisenhower Administration, which strongly opposed the $230-million, four-year program, has made only minor demands for funds. For example, though the Commerce Department spent $20 million last year, it asked for only $11 million in this year's budget—Congress having upped the figure to $20 million.

Proponents of airport expansion and improvements, of course, hail the four-year program idea as providing the kind of stability needed to make local bond issues more attractive.

• **No size limit**—The new measure prohibits any restriction on aid on the basis of airport size. This is in answer to last year's Commerce Department administrative decision which limited eligibility for federal aid to airports enpalning at least 3,000 passengers annually or permanently basing a minimum of 30 planes.

• **Includes terminals**—Still another administrative restriction lifted by Congress was that prohibiting use of federal funds for terminal buildings and allied facilities. Under the new legislation, the Commerce Department is required to determine feasibility of federal aid for terminal facilities for each individual.

• **Allocations**—Seventy-five percent of the funds will continue to be allocated to the states on the basis of a population-area formula. The other 25% will be administered directly by the Commerce Department.

Highway Bill in Trouble

It still is touch and go as to whether Congress will act on highway legislation this session. It became obvious this week that any measures that run into snags before adjournment will be pushed aside until next year.

When the highway bill came up before the House Rules Committee on Monday it was apparent that snags galore awaited it and that masterful steering plus a barrel of luck would be needed to negotiate the final route to enactment.

The plan of the Democratic leadership: Rush the bill to the floor, beat down a Republican move to substitute the Administration plan for financing through sale of bonds, then push it back to the Senate.

But the Democratic bill, which provides for financing the legislation through user taxes, would still have some hurdles to clear in the Senate. The bill cannot be cleared until the Senate Finance Committee gets an opportunity to study the new taxes imposed on highway users.

Even speedy action by the Senate would not assure complete action this session. But if the push to get it through fails, the bill can still be acted on next year. The present federal-aid highway program remains in effect through July 1, 1956.

Military Projects Exceed $2 Billion

Final action is near on fiscal 1956 construction funds for three services

A military construction program for fiscal 1956, containing projects costing more than $2 billion, is virtually ready for Presidential signature.

The Senate Appropriations Committee this week put its stamp of approval on the program, which is part of a supplemental appropriations bill. A Senate-House conference committee will be able to settle two outstanding items in short order. President Eisenhower already has signed the authorization for the military construction program.

The program will be financed by $1.2 billion in new money, plus $741 million of transferred funds. The Air Force again gets the biggest slice—$1,078,649,000, including $823 million in new money and $255 million in transferred funds. The Army's construction program comes to $486 million, all in transferred funds; the Navy's, to $443 million, all in new money.

One of the two items requiring adjustment by Senate-House conferees is the $79-million appropriation for Air Force Academy construction. The House committee had knocked this out because of the furore over design but apparently is ready to restore the cut (see story next page). The House also is expected to go along with the Senate on a $11.5-million appropriation for the proposed Air Force weapons proving center at Buckingham, Fla.

The bill contains appropriations for at least $247 million worth of classified projects, most of them outside of the U. S. The Navy accounts for $156 million of the these, the Army for $67 million and the Air Force for $27 million. Another $28 million for the Air Force is set up with no identification other than "various sites" outside the Continental U. S.

The construction program provided for in the appropriations bill follows pretty closely that which the Defense Department asked Congress to authize (ENR April 28, p. 21). Projects listed in the Defense Department's

(*Continued on page 22*)

request covered every state in the union, except West Virginia, as well as many overseas locations.

Following is a list of the larger projects and programs for which funds were provided in the appropriations bill (figures are in millions of dollars):

Army

Fort Benning, Ga.	$10,033
Fort Bragg, N. C.	15,659
Fort Hood, Tex.	17,931
Fort Carson, Col.	20,811
Fort Lewis, Wash.	14,940
Family housing at tactical installations, various locations	12,125
Far East Command area: Okinawa	43,503

Navy

Taylor model basin, Carderock, Md.	14,302
Naval Air Station, Lakehurst, N. J.	16,311
Marine School, Quantico, Va.	15,113
Pollution abatement, including land purchase, at various locations	15,149
Naval Base, Subic Bay, Philippines	18,379
Communication facility, Philippines	10,332

Air Force

Greater Milwaukee, Wis. area	16,608
Griffiss AFB, N. Y.	15,803
Olmsted AFB, Pa.	21,264
Wright-Patterson AFB, Ohio.	13,593
Arnold Engine Dept. Center, Tenn.	15,475
Hartford, Conn., research facility	22,375
Charleston AFB, S. C.	10,076
Clinton Sherman AFB, Okla.	10,208
Dow AFB, Me.	15,178
Ellsworth AFB, S. D.	12,380
Plattsburg AFB, N. Y.	21,988
Portsmouth AFB, N.H.	24,850
Smoky Hill AFB, Kans.	12,529
Alaskan Air Command	28,829
Far East Air Force	14,082
Military Air Transport	19,640
Northeast Air Command	23,601
Strategic Air Command	37,026
USAFE, Atlantic area	15,677
USAFE, Middle East	67,652
USAFE, Spain	54,217
USAFE, United Kingdom	33,707

California Roadbuilding Sets New Record in June

State highway construction in California reached an all-time high in June, with $238 million in contracts under way.

Previous peak value of active contracts was in May when the total was $227 million.

Air Academy Gaining Favor in Congress

Senate committee votes $79 million for construction and House critics ready to go along as controversy subsides

Controversy over Air Force Academy design concepts this week had subsided to the extent that the Senate Appropriations Committee was willing to vote the $79 million in construction funds which House committeemen deferred pending architectural changes.

The military appropriations bill, containing the academy item, goes to the floor of the Senate this week and from there to a House-Senate conference committee. Meanwhile, indications are that design changes have given members of the House Defense Appropriations Subcommittee a change of heart. Its chairman, Rep. George Mahon (D-Tex), already has indicated he will vote to restore the $79 million.

"The Air Force has, since it first appeared before us, made a very excellent additional presentation," Mahon said. "In my opinion, they have greatly improved their position."

His comment refers to the closed meeting last week at which Air Force officials appeared before Mahon's subcommittee with new "improved" designs for academy buildings. (ENR July 21, p. 21).

The record of that hearing has not been published. But one person who was present said the proposed new designs do not vary much from the originals in general layout and profile.

Biggest design change, according to this source, is the use of much less glass. He added that while Air Force officials still are debating which materials should be substituted for the glass, "their general inclination is to go heavily for native stone".

• **Some plans ready**—Plans for some academy buildings now are on the desk of Air Force Secretary Harold E. Talbott, ready for final approval. Others will follow shortly, according to an Air Force spokesman. "They're all in there or close to being there," the spokesman said.

One exception is the chapel. Skidmore, Owings & Merrill, architects for the project, have not yet submitted their new designs for a new chapel. Their original concept, an ultra-modernistic "accordion-like" building, stirred up a storm in Congress. This design was dropped entirely by the Air Force as one move to win Congressional approval for funds to start work.

• **Materials battle**—While differences in opinion over preliminary designs helped to spark controversy in Congress, there was also the threat of a fight over materials to be used.

This is clear from testimony by representatives of the Allied Masonry Council before the Congressional committee which challenged the architects' original choice of glass for the walls.

It was further substantiated last week when the council offered its engineering services to expedite construction of the academy to a newly-revised design using more masonry—80% more, according to the council, which is an alliance of major masonry producers, contractors and labor unions.

Earlier testimony by the masonry representatives challenged a statement that masonry would be "too expensive" compared to the original design using glass, aluminum and stainless steel.

As an example, Harry C. Plummer, chairman of the Masonry Council's engineering committee, cited comparative estimates for facing a 30-in. wide pier, 11 ft high. These estimates put the in-the-wall cost for stainless steel at $465, for aluminum at $265 and form limestone at $115. And, he criticized glass for its high maintenance.

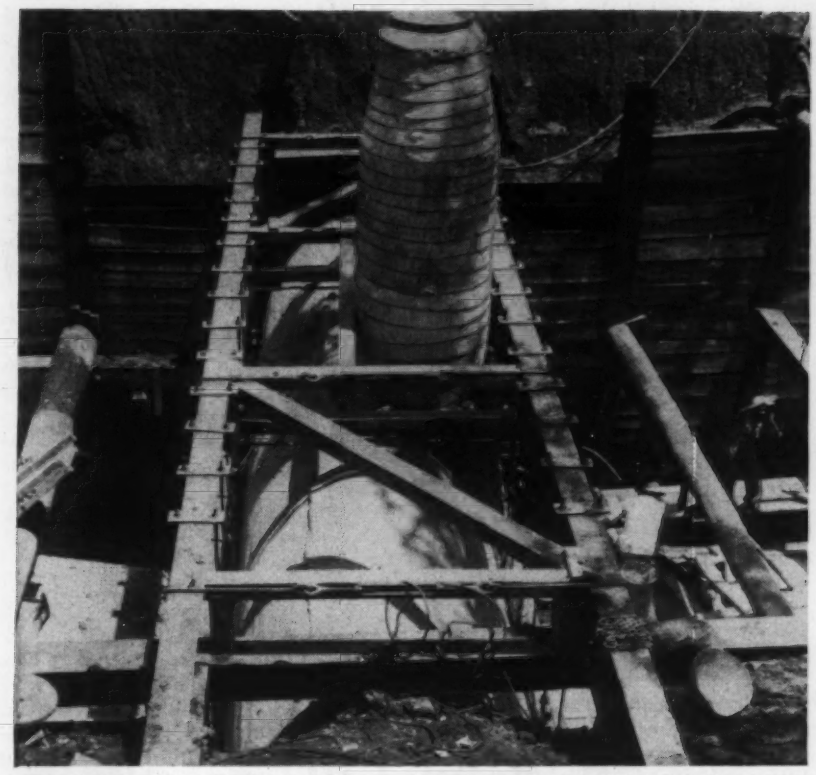
Ontario Hydro Awards Seaway Contract to Pitts

A contract for channel improvements at Galop Island in the international section of the St. Lawrence Seaway was awarded last week to C. A. Pitts General Contractor, Ltd., Toronto, for $11,700,420 by the Ontario Hydro-Electric Power Commission.

The work involves excavation of about 14,500,000 cu yd of earth and material other than rock, and about 1,000,000 cu yd of rock.

C. A. Pitts General Contractor Ltd. is the Canadian subsidiary of Merritt-Chapman & Scott Corp., New York. The company also holds a contract for more than $1 million for the supply of rock, sand and crushed stone from an Ontario Hydro-Electric Power Commission quarry for St. Lawrence power construction.

The Galop Island contract has a three-fold importance to the St. Lawrence project. It will help provide the deep waterway channel from Montreal into Lake Ontario with a minimum of canal and lock works; it will produce the flows necessary for the best power development, and will help control Lake Erie water levels. The job is scheduled for completion July 1, 1958.



COMPLICATED SEWER CROSSING in Dallas made it necessary for Army Engineers to suspend a sanitary sewer in mid-air to keep it in operation while construction of a new storm sewer progressed below. This is part of the Turtle Creek project.

Suspended Sewer Stays in Operation

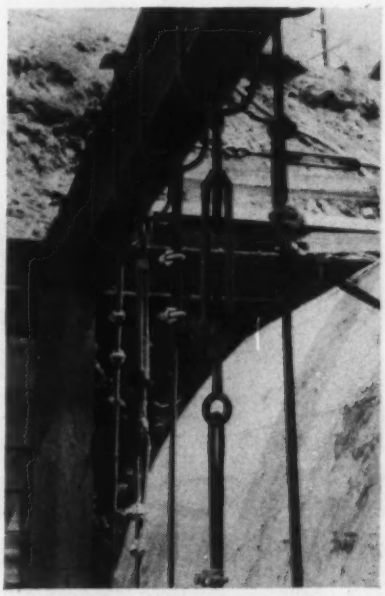
Construction of a giant storm sewer at Dallas, Texas, has presented Army Engineers and contractors with an opportunity for unusual installation techniques.

The Corps of Engineers is directing a $10-million improvement program for the levees and interior drainage facilities at Dallas, to protect large industrial and residential areas of the city against the vagaries of the Trinity River (ENR May 5, p. 27).

Among the projects involved in the modernization program is construction of the 7,800-ft long Turtle Creek pressure sewer which will carry runoffs from Dallas' Turtle Creek area into the leveed Trinity River. The storm sewer is horseshoe-shaped with an average diameter of 18 to 21 ft.

• **Can't move sanitary sewer**—Army Engineers and contractors, McKenzie Construction Co. and Whittle Contracting Co., both of Dallas, were confronted with the problem of how to cope with an existing 72-in. main trunk sanitary sewer crossing over the new storm sewer. The sanitary sewer could not be taken out of operation at any time during the work.

The construction technique adopted was to excavate a section of the sanitary sewer, and support it by suspended cables while the new storm sewer was being built.



HEAVY STEEL CABLES support 76-ton exposed section of sanitary sewer over a ditch that is 30 ft wide and 43 ft deep.

The sanitary sewer was undisturbed during the operation, and even a manhole opening, 10 ft high over the sewer, withstood the test. To strengthen the manhole, exterior surfaces were wrapped with reinforced steel and gunited.

The exposed sanitary sewer section, which weighed an estimated 76 tons, was supported during the construction period by 14 one-inch round suspension cables fastened to structural steel beams that spanned the 30-ft wide, 43-ft deep ditch.

Piles were driven and set into shale to a depth of about 57 ft for vertical support. Close vertical controls were maintained to detect any settling of the suspended sanitary sewer.

Congress Asked to Approve Big Ventura River Project

Congress has been asked to authorize construction of the proposed $27.7-million Ventura project following a favorable report by the Bureau of Reclamation. The report, sent to Congress last week, has been approved by the Budget Bureau and other federal and state agencies.

The project, to be located about 60 mi northwest of Los Angeles, Calif., would include 275-ft high Casitas Dam, an earth dam about two miles upstream on Coyote Creek from its junction with Ventura River; Robles Diversion Dam, a rockfill structure on the Ventura River; and a main conduit system, including seven pumping plants, to take water to elevations higher than the reservoir.

W. A. Dexheimer, Commissioner of Reclamation, cited the Ventura project as an excellent example of the Administration's partnership policy on public works. Ventura River Municipal Water District paid 50% of the costs of investigation and also contracted to pay the federal government more than $700,000 for preconstruction work, including design drawings and specifications.

Commission Names Designers For House Office Building

The House Office Building Commission has selected architects for a $35-million project that includes a third House Office Building and remodeling of present facilities.

The commission, headed by Speaker of the House Sam Rayburn, named the following architects: John Harbeson, William J. Hough, William H. Livingston and Roy F. Larson, Philadelphia; Jesse M. Shelton and Alan G. Stanford, Atlanta, Ga.; Roscoe DeWit and Fred L. Hardinson, Dallas, Texas; and Albert Homer Swanke, New York City.

The House Office Building will take three to four years to complete.

N.J. Water Study

Consultants suggest new location for reservoir; put cost at $102 million

A New York engineering firm retained by the New Jersey legislature to study the state's critical water supply problem (ENR May 19, p. 28) has submitted a report recommending construction of a $102-million reservoir at Chimney Rock in Somerset County. The reservoir would serve northern New Jersey communities.

The report, submitted by Tippetts-Abbett-McCarthy-Stratton, represents a setback for Gov. Robert B. Meyner who has been urging the legislature to approve a reservoir in Round Valley, in Hunterdon County.

Three reasons were cited in the report for the engineers' preference of Chimney Rock over Round Valley:

- Chimney Rock Reservoir could be completed by 1960 or 1961 and would cost an estimated $102,650,000 as against an estimated cost of $143,630,000 for a reservoir at Round Valley.
- Some 180 mgd of the eventual 200 mgd capacity at Chimney Rock could be taken from the Raritan River, which is entirely in New Jersey. A reservoir at Round Valley would have to draw 130 mgd from the Delaware River, requiring an interstate compact.
- Chimney Rock would require a shorter transmission line to Elizabeth and other North Jersey communities, and a compensating reservoir would not be needed.

• Early action seen—On the basis of this report, State Senator Mark Anton, chairman of the legislative water supply committee, said his group will recommend to the legislature that the Chimney Rock site be approved.

Anton also plans to introduce bills to finance the first stage of the Chimney Rock project. The first stage would cost $53,860,000 and would provide 70 mgd.

Gov. Meyner commented after the engineering report was made public that the Chimney Rock site is good from an engineering standpoint. But there is still a question of whether location is practicable, Meyner contended. He urged the legislature to hold public hearings to determine whether the Chimney Rock site would displace too many persons from their homes and whether the engineers' estimates of the cost of the Round Valley Reservoir are accurate. Meyner said his advisors believe the Round Valley project should cost not more than $79 million, some $64 million less than the engineers estimated.

In calling for public hearings, Meyner also suggested that a Sept. 1 deadline be set for choosing a site.

• Opposition develops—Meanwhile, pressure began to mount on members of the legislature last week to call for new public hearings. Opposition to the Chimney Rock site began to develop almost as soon as the engineering report was made public.

Among the leaders of the opposition to the Chimney Rock site were the Elizabethtown Water Co., which pumps its water from the Raritan River, and the Johns-Manville Corp., which takes 12 mgd daily from the Raritan for industrial purposes.

F. K. Mittry Constructors Subs Tunnel Job to Combine

F. K. Mittry Constructors, of Los Angeles, has subbed the remaining portion of the upstream tunnel job on which it pioneered in the use of the "Mittry Mole" to Oahe Constructors, a combine.

The job is at the Army Engineers' Oahe Dam, located near Pierre, South Dakota. The $9,465,280 contract is about 45% complete, with $5,315,904 worth of work still to be done.

Members of the Oahe Constructors combine are: Foley Brothers, Inc., St. Paul; Winston Brothers Construction Co., Minneapolis; C. F. Lytle Co., of Sioux City, Iowa; Donovan Construction Co., St. Paul; and Missouri Valley Construction Co., Leavenworth, Kan.

With the Mittry contract, Oahe Constructors now has about $15.7 million worth of work at the dam. The combine holds a $5.8-million downstream tunnel contract and a $4.6-million contract for vertical control shafts at the dam.

The Mittry contract called for drilling six tunnels, each 1,700 ft long and 22 ft in rough bore. Of the six, two have been drilled. All six intake structures have been completed.

Under the subcontract, the combine has not only taken over responsibility for the Mittry contract but also is acquiring Mittry equipment at the site, including the "Mole."

Highway Budget Approved

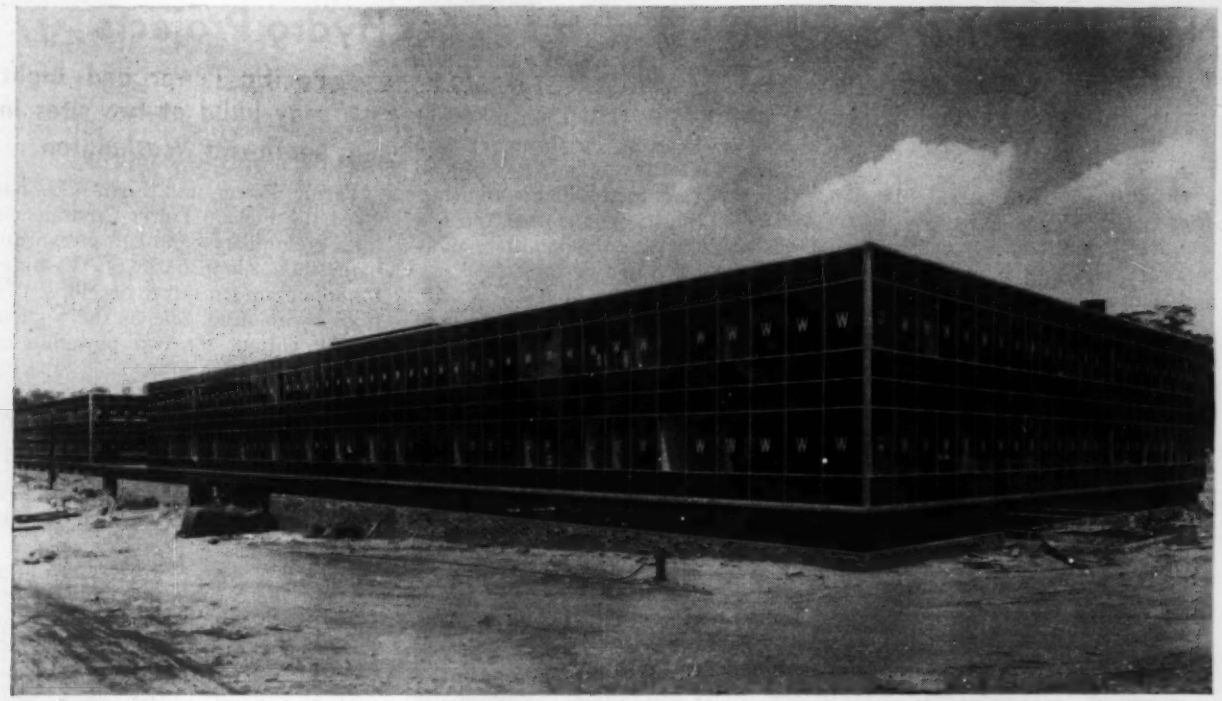
A record $46.8-million annual budget for the Colorado Highway Department has been approved by Gov. Edwin C. Johnson for the fiscal year beginning July 1. The budget includes $3.4 million for construction on the multi-lane Valley Highway in Denver. Another major project is $1.2 million for a four-lane highway through Idaho Springs.

Corrugated Concrete Slab Forms Gym Roof

A corrugated reinforced concrete slab, 4-in. thick, forms the unusual roof of a new, one-story school gymnasium at Kenmore, Wash. The 231-ton roof, which covers a 50 by 88 ft gymnasium, is supported only on the concrete end walls and six concrete columns along each side. Pitch of corrugations is 8 ft. The rise is 3 ft 8 in. The design enables this slab to span 50 ft. And, it also has good acoustical qualities, says Ralph Burkhard, architect.

Inside, the concrete will be painted to serve as the ceiling, while the outside will receive 2-in. insulation, topped by built-up roofing.

Concreting was accomplished in a single day with a very dry mix. A crane with a one-half cu yd bucket placed the concrete. Contract was held by the Brazier Construction Co., of Seattle.



ALUMINUM FRAMING for panels forms a distinctive part of the architectural scheme for drug research building.

Walls Go Up Like Windows

Panel wall construction and improved air conditioning are the features of the combined laboratory and office building into which Wyeth Laboratories Division of American Home Products Corp. will move next month.

To be used for research on pharmaceuticals, the building, actually two interconnected structures, occupies a space 122 ft x 482 ft at Radnor, Pa.

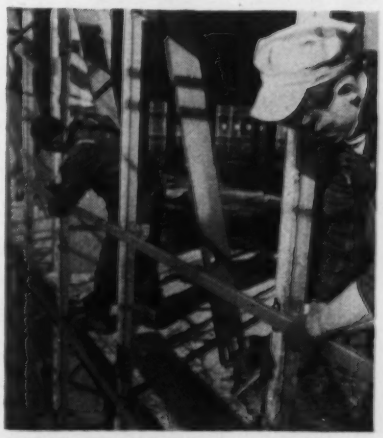
The porcelain-enameled blue-green sandwich panels that form the exterior of the building are manufactured at Beaver Falls, Pa. by Ingram-Richardson Manufacturing Co. They arrive at the site, complete with insulation, ready to be installed in aluminum bays of the building in a manner similar to plate glass. From the exterior to the interior side, a typical panel cross-section would reveal:

A 16-ga porcelain-enameled steel plate, ¼-in. of aluminum honeycomb backed by a 24-ga steel plate, 1½ in. of glass-fiber insulation, and an 18-ga galvanized steel back panel. The built-up sections weigh 7 psf and cost $3.50 psf in place. An average panel measures 3 ft x 4 ft 8 in.

The temperature, humidity and circulation of air were of major importance in the mechanical design of the laboratory building. A high rate of air exchange is provided in the air conditioning system by making use of exhaust hoods in each room that exhaust air directly to the outside via stainless steel ducts. The system utilizes a conditioned (temperature and humidity) fresh air supply plus a tempered air supply fed directly into the hood in order to equalize input and output.

The floors were designed as flat slabs with concrete filler blocks. This was to provide for increased depth without appreciably increasing the dead load.

Architects are Skidmore, Owings & Merrill; engineers are Seelye, Stevenson, Value and Knecht; and the general contractor is the George A. Fuller Co.—all of New York City.



GROOVED aluminum horizontal strips are fastened to vertical members.

WALL PANELS are easily put in place with suction handles.

WINDOWS are installed in a similar manner, permanently sealed in place.

New Toll Policy

Delaware Memorial Bridge to back new bond issues for access road project

Delaware's legislature, still in session after nearly seven months, has already approved important construction measures affecting highways, schools and slum clearance.

The legislature authorized the use of new Delaware Memorial Bridge revenue bonds to pay for new access roads and possibly additional river crossings. A traffic bottleneck on the DuPont Parkway, from the toll bridge approach to State Road, was one specific target of the bill.

Creation of a separate unit within the highway department to operate the Delaware Memorial Bridge was authorized by the legislature.

• **Highway program approved**—A $10-million bond issue to pay for the hard-surfacing of 2,000 miles of dirt roads was approved by the legislature. The road surfacing program will be spread over a 10-year period.

A school construction program also won legislative approval. Total cost of the program will be $43,964,900, of which $27,637,000 will be in the form of state grants to local school districts.

The legislature also approved enabling legislation for Wilmington's slum clearance program. Funds spent by the city for slum clearance or redevelopment will be exempt from the city's bonded debt limit. And, the mayor and city council will be authorized to borrow $1 million to assist the city housing authority in its rehabilitation of a 22-block area on the east side of the city.

Tacoma Takes Legal Risk, Issues Bonds for Big Dam

The City of Tacoma, Wash., has taken a legal gamble in order to proceed with issuance of bonds to finance the first stage of the $146-million Mayfield Dam and powerhouse on the Cowlitz River (ENR April 28, p. 27).

The city persuaded Thurston County Superior Judge Charles Wright to modify a temporary restraining order that would have blocked the bond sale. Under the terms of the sale, Tacoma had to deliver the bonds by July 21. The city runs the risk of a later adverse legal decision. Hearing on an issuance of a permanent injunction against construction of the dam is set for Aug. 8 before Judge Wright.

Tacoma may continue with preliminary engineering work and construction of an access road to the dam site, the judge ruled. Contracts for construction of the dam and installation of generators were awarded previously.

The injunction to stop construction of the Mayfield Dam is sought by the Washington Fisheries and Game Departments. They contend that state law established a fish sanctuary on the river, and that the city has no right to condemn state property, dedicated to a state use.

Two New Cities Planned

Plans for creation of two new cities on a 15,000-acre tract in New Jersey were announced last week by a Queens County, New York, real estate syndicate.

Louis W. Licht, president of Lane Realty Co., of Forest Hills, N. Y., announced purchase of the huge tract of land in the Lakehurst-Toms River area of Ocean County, N. J., about 60 mi from New York City.

The group plans two separate, self-contained communities, one in the Lakehurst area, and the other on the Toms River site. Together, the communities will have a population of 200,000, Licht said.

In a 10-year period, the developers plan to build thousands of homes, a number of industrial plants, shopping centers and recreational facilities, according to Licht.

Survey Request Rejected For Passamaquoddy Project

Congress again has blocked the Passamaquoddy tidal power project in the Bay of Fundy, in Maine.

The House Rules Committee, by a tie vote, ended further consideration this session of a $3-million survey of the proposed international project by the Army Engineers. The Senate approved the survey earlier this year.

Since uncompleted legislation carries over to next year, there is still a chance for the House to act on the proposal in this session of Congress.

Governor Names Commission To Study Highway System

Gov. Luther H. Hodges of North Carolina has appointed a seven-member commission to study all phases of the State Highway Commission and its operations, including road-building and financial policies.

The study was authorized by the legislature after the governor told state lawmakers that the Highway Commission has sometimes been too independent in the past. He suggested the commission should plan more of the highway work on a state-wide basis and curb the "autonomy" of the commission's 14 divisions.

Hydro Projects

Pacific Power and Light may build at two sites in southwest Washington

Pacific Power and Light Co. has asked the Federal Power Commission for a preliminary permit to investigate harnessing of four southwest Washington mountain streams to develop 2,175 ft of hydro head, one of the highest in the nation, for two powerhouses which would have an installed capacity of 74,000 kw.

At the same time, PP&L vice president Robert de Luccia announced the utility is studying the Swift Creek site on the Lewis River, where it is estimated that 250,000 kw may be developed.

Both proposals, the Meadows project and the Swift Creek, are on the upper reaches of the river where the Pacific Northwest company has its Merwin and Yale Dams. These dams have an installed capacity of 233,000 kw.

• **Several dams involved**—The Meadows project would entail two main dams, three smaller diversion dams, three canals, two steel penstocks and two "high head" power plants.

The plan calls for an earth-fill dam 140 ft high and 2,500 ft long, across Big Creek. This would shift the flow of Big Creek over into Meadow Creek. A second dam, slightly higher than the first, but not as long, would dam Meadow Creek and create a storage reservoir. A small dam on Rush Creek and a mile-long canal would direct this stream into the Meadows reservoir.

From this storage pool, a main canal, about 3 mi long, would end in a 2,500-ft long steel penstock which would drop the water to the No. 1 powerhouse, utilizing the first 795 ft of head. This powerhouse would have an installed capacity of 23,000 kw.

Another diversion dam would be built below No. 1 powerhouse. This dam would shunt the flow into another steel penstock, about 2.5 mi long, to No. 2 powerhouse, which would utilize the final 1,380 ft of head. This powerhouse would have an installed capacity of 51,000 kw.

• **Large storage area**—The utility expects the Meadows project to make a substantial contribution to the regional need for new power resources. The four mountain streams rise in the wilderness country west of Mt. Adams and lie in the "high country" of the Cascade Range. The four streams drain a 46 sq mi area and the pool would provide about 65,000 acre-ft of usable storage.

Water Supply

Dallas approves contract for $20-million reservoir; authority plans 13 others

Dallas, Texas, took a major step last week to solve its long-range water supply problem when the City Council approved a contract with the Sabine River Authority for a new water supply reservoir.

The reservoir, which will cost an estimated $20 million, will be located on the Sabine River, 40 mi east of Dallas. It is the first of a series of reservoirs proposed by the river authority in a long-term master plan prepared by Forrest and Cotton, consulting engineers.

Dallas will pay the entire cost of the project and in exchange will get perpetual rights to 80% of the water produced. The engineers estimate that this will add a minimum of 160 mgd to the city's water supply, and will provide the river authority with 40 mgd.

The yield is expected to exceed the minimum yield easily, since the total of 200 mgd is based on the flow of the Sabine River during the worst drought on record, from 1908 to 1913. The Dallas share of 160 mgd is about twice the average amount of water used by the city now.

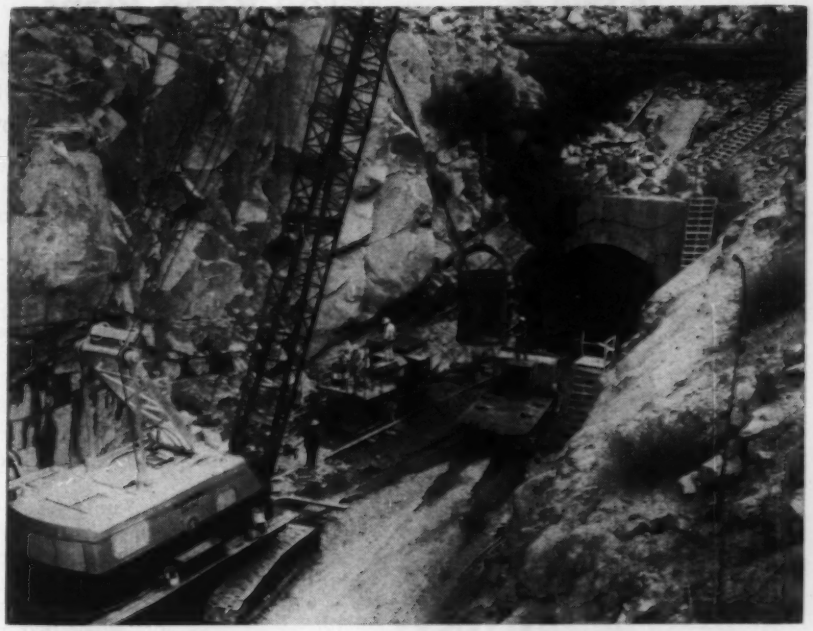
• **Six-mile dam**—The plan calls for construction of a 6-mi-long dam at the Iron Bridge site in Van Zandt and Rains Counties. A 38,000-acre lake would be created. This part of the project would cost $20 million. The city also must build a pumping station at the reservoir, a new purification plant and a 45-mi conduit to bring the water to the city. This may cost an additional $20 million.

Present plans call for issuance of 30-year revenue bonds to finance the project.

Actual construction of the reservoir at Iron Bridge probably will not start for several years, however. Land acquision has not started yet and plans must be drawn for the dam and other facilities.

This reservoir is one of 14 proposed in the Sabine River Authority's master plan, which was also drawn by Forrest and Cotton.

These 14 reservoirs would involve a total storage of 7,773,400 acre-ft, of which 6,317,300 acre-ft would be for water conservation and 1,456,100 acre-ft would provide space for accumulation of silt, create head for hydroelectric power in one project, and form permanent pools in all projects for recreation and other purposes.



Concrete to Form 300-ft Plug . . .

. . . Pumped Into Diversion Tunnel

Plugging the diversion tunnel under the mass concrete section of $65-million Folsom Dam on the American River in northern California is accomplished by pumping concrete a total distance of about 1,700 ft to form a 300-ft plug. Plugging is being done in 50-ft sections, separated by bulkheads.

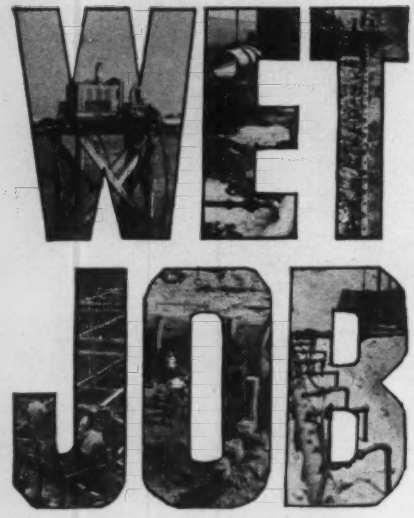
At the downstream portal (top photo), a 4-yd bucket of mix is fed into the hopper of a concrete pumping machine. The mixture is then pumped 1,200 ft into the diversion tunnel to a second machine (bottom photo).

The booster pumping machine picks up the concrete, to complete the distance and relay it into place behind the bulkhead. After pumped mix is set four days, neat cement is pumped in for crown grouting.

Two years from now when the concrete reaches a stable temperature all the crevices resulting from shrinkage will be grouted.

Work is being done by Merritt-Chapman & Scott of New York and Savin Corp. of Hartford, Conn., prime contractors for the Corps of Engineers.

IF IT'S A



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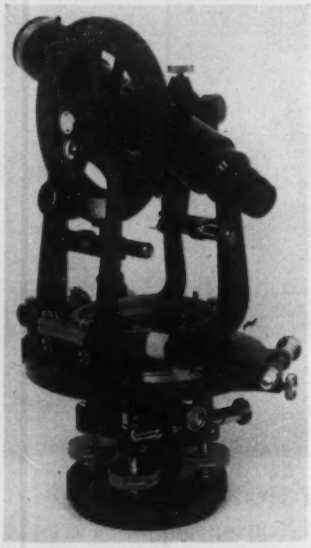

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Toll Road Plans

Turnpike officials agree on tri-state road policy; Indiana studies approved

Toll road plans advanced last week in two areas, ran into a delay in a third state, and were virtually ruled out in a fourth.

In a conference at Roanoke, Va., officials of Virginia, West Virginia and North Carolina agreed on three points affecting the future of a proposed tri-state toll road.

Route involved is the proposed Old Dominion Turnpike which would connect with the West Virginia Turnpike and a proposed North Carolina toll road.

The officials agreed on:

- Unlimited truck weights as a selling point to truckers, who are expected to pay about 60% of the toll revenue.
- Setting up one toll booth at each border crossing, instead of two as required on other turnpikes. A motorist would pay his toll at the stop for the state through which he had just passed and would pick up an entry ticket for the next state at the same toll booth.
- Posting a 65-mi an hour speed limit on the unbuilt four-lane Virginia and North Carolina segments of the turnpike, and a 60-mi an hour limit on the West Virginia section, which would be two lane.

Coverdale & Colpitts, New York engineers, will submit a report in October covering traffic and earnings potential of the tri-state project. A representative of the firm hailed the agreements that had been reached by the officials of the three turnpike agencies as vital in determining the potential traffic load.

• **Indiana study approved**—A proposed toll road in Indiana received a helping hand when the State Finance Board voted another $265,000 to finance a final traffic and construction survey for a north-south toll road from Hammond to U. S. 40, east of Indianapolis. Construction could start in the spring, if bonds can be marketed in time.

Construction cost of the new route is expected to be at least $138 million. This estimate does not include interest charges, administration and right-of-way costs.

Gov. George N. Craig has estimated that total cost of the project will be "a little less" than Indiana's $280-million East-West Turnpike.

• **Court test delayed**—Legality of a proposed $227-million Tacoma-Seattle-Everett toll road in the State of Washington won't be decided for at least two more months. A court test was originally scheduled for July 27, then postponed until Sept. 15.

And, in Colorado, Gov. Ed Johnson turned thumbs down on toll roads, except for "special situations." He specifically ruled out an east-west Colorado toll road, which he said could not compete with a free highway.

The governor made it clear that he is "very much opposed" to any toll highway planning, except for special purposes, although he reiterated his approval of toll bridges and a toll tunnel under the Continental Divide.

Colorado's legislature this year passed a law empowering the governor or the Highway Commission to start toll road studies. But the department said it is not launching any new studies, and the governor said he will not ask for any.

The state, however, is going ahead with its previously announced plans for a toll road under the Continental Divide. The site is expected to be selected this fall, after completion of engineering studies.

Short Course Scheduled For Prestressed Concrete

A three-day "short course" in prestressed concrete has been scheduled for Oct. 10, 11, and 12 at the Maritime Base, St. Petersburg, Fla., by the Prestressed Concrete Institute and the Department of Civil Engineering of the University of Florida.

First two days of the course will be devoted to lectures reviewing beam theory, basic theory of prestressing, materials used in prestressed concrete, post-tensioning, pre-tensioning and related topics.

Those attending will have an opportunity to design both simple and complicated structures at design sessions.

Outstanding engineers in the field will present their ideas on the third day through papers, movies and slides —covering materials, design, manufacture, and both present and future uses of prestressed concrete.

New York Selects Route For New Thruway Link

The New York State Thruway Authority has selected the preliminary route of the Berkshire Thruway section, which will link the main trunk of the superhighway south of Albany with the Massachusetts Turnpike, which is now under construction.

The Berkshire section, approximately 24 mi long, will cross the Hudson River over a new bridge to be built north of the present New York Central Railroad bridge at Castleton. The Authority has applied to the Army for approval of the plans and location of the new crossing.

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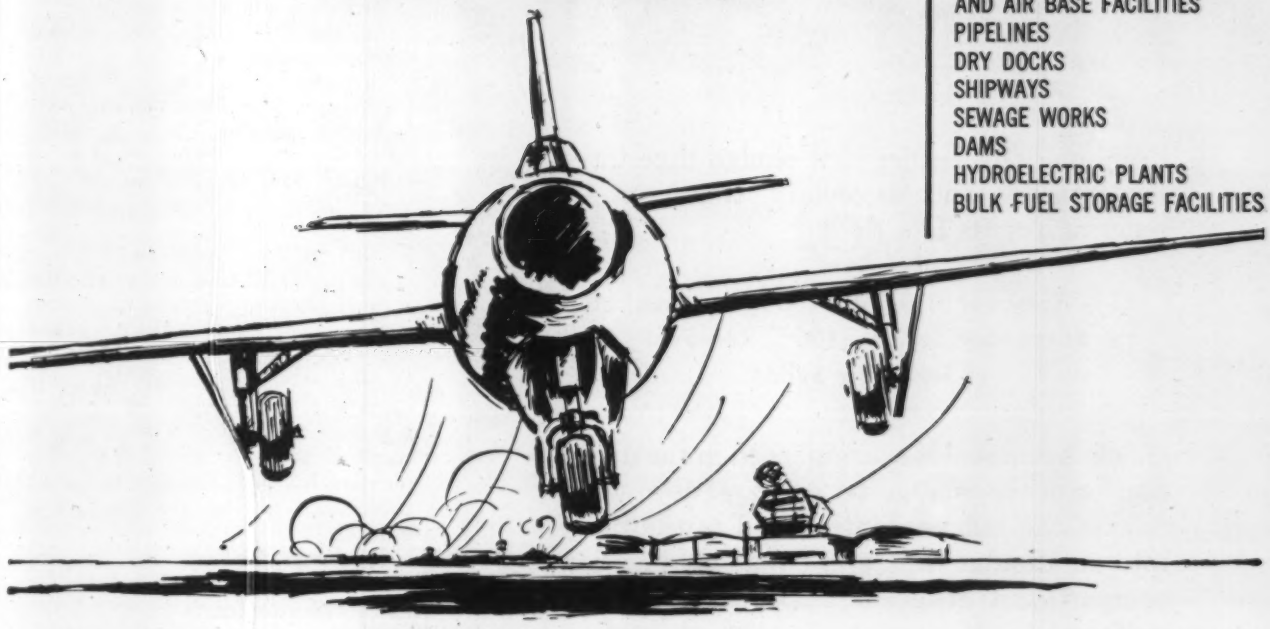

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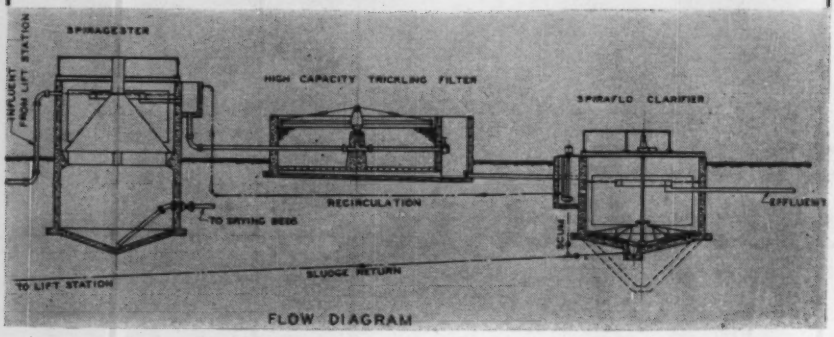

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Trolley Tracks Ruled Out For Pittsburgh Bridge

Trolley tracks won't be included on Pittsburgh's proposed Fort Pitt Bridge, part of the $150-million high-speed Penn-Lincoln Parkway, if a decision of the Pennsylvania Public Utility Commission is upheld.

When the double-deck Fort Pitt Bridge is thrown across the Monongahela River, the present Point Bridge, which carries tracks of the Pittsburgh Railways Co., will be torn down. The firm went to the PUC (ENR Feb. 17, p. 45) in an effort to have tracks included on the new span so the company's connection with the city's West End would not be broken.

But the PUC emphatically turned down the request.

"Installation of tracks would defeat the very purpose for which this vast highway improvement is being undertaken—the safe, convenient and uninterrupted flow of great volumes of traffic through and on the approaches to the central business section of Pittsburgh," the commission said.

The commission's order for the State Highway Department to proceed along present plans—without tracks—did not go on to decide the fate of the West End trolley routes. Allegheny County officials fear political ramifications because of this. They feel that they will be on the spot if the trolley question has not been settled by the time razing of the old structure is ordered.

Pittsburgh Railways has declined suggestions that it switch to buses for its over-river routes.

Chicago Gives Green Light To Fluoridation Program

The nation's second largest city will go ahead immediately with a water fluoridation program, ending a prolonged controversy.

Mayor Richard Daley of Chicago authorized contracts totaling $150,000 for an initial supply of 5,000 tons of fluoride. Chicago, like Baltimore and Philadelphia, will use hydro fluosilicic acid.

The fluoridation program also will affect 51 suburbs which purchase Lake Michigan water from the city of Chicago. Fluoridation will start in about 90 days for the area served by Chicago's South Side filtration plant. But the rest of the city will not get fluoridated water for six to eight months because it will be necessary to build control rooms and other facilities at the Lake View and Chicago Avenue pumping stations. Fluoridation was authorized by the City Council in June 1954 and funds were appropriated last December.

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To prove that statement—let's look at the facts. In the charts below, we compare Chrysler Ind. 56 V-8 Engine with similarly equipped products of five principal competitors. Information on each competitive engine is based upon factory specifications. Check the Chrysler advantages—each of them is an important factor in the selection of a power plant.

Engine	Horsepower and Piston Displacement	Pounds per Horsepower	Fuel Consumption—pounds per BHP per hour	Horsepower per Cubic Inch Displacement	
Engine A	110 at 2200 RPM 358 cu. in.	(Stripped Engine) 7.38	.54	.307	**CHRYSLER ADVANTAGES OVER ENGINE A** . . . delivers 18 more horsepower . . . weighs 96 pounds less with 24% less weight per horsepower . . . uses 7.5% less fuel at average operating speed . . . delivers 26% more horsepower per cubic inch displacement
Chrysler Model Ind. 56	128 at 2200 RPM 331 cu. in.	(Stripped Engine) 5.58	.50	.387	
Engine B	104 at 2400 RPM* 330 cu. in.	(Stripped Engine) 6.92	(Information not available)	.315	**CHRYSLER ADVANTAGES OVER ENGINE B** . . . delivers 34 more horsepower . . . weighs 5 pounds less with 25% less weight per horsepower . . . delivers 32% more horsepower per cubic inch displacement
Chrysler Model Ind. 56	138 at 2400 RPM 331 cu. in.	(Stripped Engine) 5.18	.50	.416	
Engine C	99 at 2200 RPM 320 cu. in.	(Stripped Engine) 7.64	.56	.309	**CHRYSLER ADVANTAGES OVER ENGINE C** . . . delivers 29 more horsepower . . . weighs 60 pounds less with 27% less weight per horsepower . . . uses 10.5% less fuel at average operating speed . . . delivers 25% more horsepower per cubic inch displacement
Chrysler Model Ind. 56	128 at 2200 RPM 331 cu. in.	(Stripped Engine) 5.58	.50	.387	
Engine D	117 at 2200 RPM 317 cu. in.	6.5**	.50	.369	**CHRYSLER ADVANTAGES OVER ENGINE D** . . . delivers 11 more horsepower . . . weighs 19 pounds more *but* with 6% less weight per horsepower . . . delivers 5% more horsepower per cubic inch displacement
Chrysler Model Ind. 56	128 at 2200 RPM 331 cu. in.	6.1**	.50	.387	
Engine E	97 at 2200 RPM 372 cu. in.	(Complete Engine) 12.85	.58	.260	**CHRYSLER ADVANTAGES OVER ENGINE E** . . . delivers 31 more horsepower . . . weighs 395 pounds less with 48.7% less weight per horsepower . . . uses 14% less fuel at average operating speed . . . delivers 49% more horsepower per cubic inch displacement
Chrysler Model Ind. 56	128 at 2200 RPM 331 cu. in.	(Complete Engine) 6.6	.50	.387	

**Information not available at 2200 RPM* ***Complete engine less flywheel housing*

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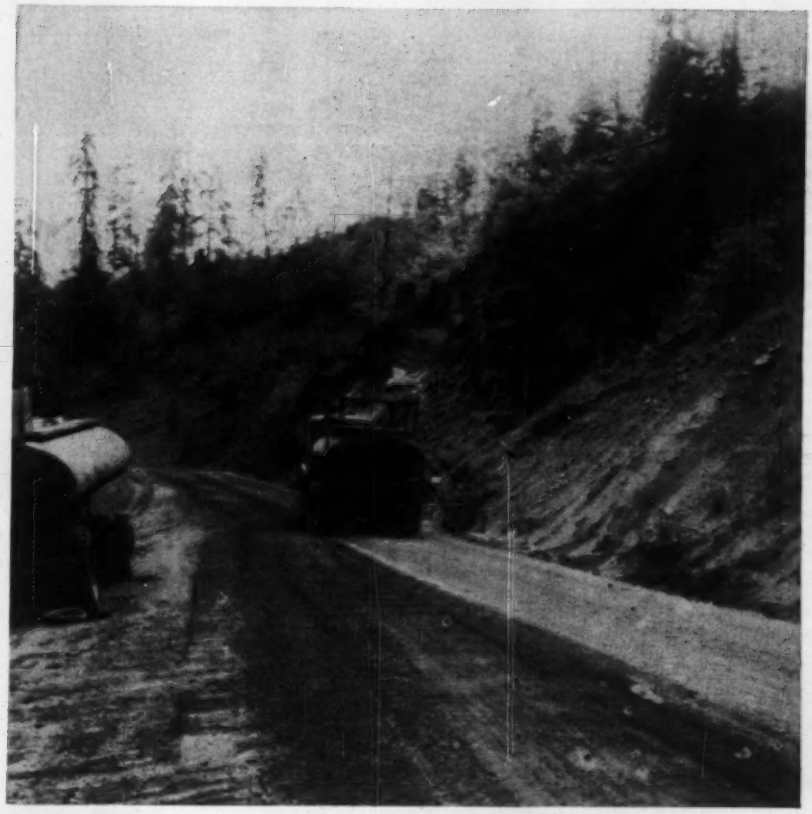


SPRINKLER TRUCK coats log road in Oregon with mixture of emulsified asphalt and water as part of a 4-year test program on dust resistive measures.

Log Road Wetted Down With Asphalt

This summer, logging roads used by Weyerhaeuser Timber Co. in Oregon will be treated with a mixture of emulsified asphalt and water as a means of dust control. The light surface coat results from a 4-year test program carried out by Weyerhaeuser. And although results to date favor the asphalt-water mix, the test program is still going on.

The 20-ft wide logging roads are subject to constant traffic from vehicles weighing 150,000 lb or more. They are equivalent to well-graded, compacted base courses and ordinarily have no surfacing. But dust does become a definite hazard.

The test program has been in progress since 1950. Several surface treatments were tried, with each treatment checked for ability to provide, at low cost, a satisfactory wearing surface requiring a minimum of maintenance and not too frequent repeated applications. The dust treatment work had to be done without any interruption in the log truck traffic. Here are the findings of the study:

• **1950:** Surfacing involved SC-1A cutback asphalt with 10% diesel oil added applied at a 0.5 gal per sq yd rate. There was no cover and result was considerable pickup and raveling under traffic. To maintain the road, almost continuous penetration patching, using emulsified asphalt, was needed.

• **1951:** The same treatment was used for the second test. But crushed rock (0-¾ in.) was placed on those sections where pickup and raveling had been severe. Result was about two months wear before patching became necessary. For patching, asphaltic concrete was spread by grader and compacted under traffic.

• **1952:** Weyerhaeuser tested a surface treatment of PS-400 fuel oil spread hot (150-200 F) at the rate of 0.3 gal per sq yd. A crushed rock cover course was applied, eliminating pickup and raveling for some time. Engineers noted longer, trouble-free life in the fuel oil treatment. But cost proved high due to increased quantity of cover aggregate required to prevent pickup.

• **1953:** This year the test road was treated with a slow-setting, mixing-grade emulsified asphalt with a relatively soft base (Bitumuls SS-1). Heavy dilution was used (90% water and 10% asphalt). Three applications were made using 4,000 gal of the mix per mile.

The treatment, applied by a two-man crew, required no cover aggregate and did not pick up or ravel despite constant traffic during the application. The mixture was applied with a 2,000-gal water sprinkler truck (gravity spray bar) which was followed closely by a blade grader which lightly "square bladed" or slurried the materials, preventing runoff. The two-man crew completed two to three miles per eight hour day, depending on length of water haul.

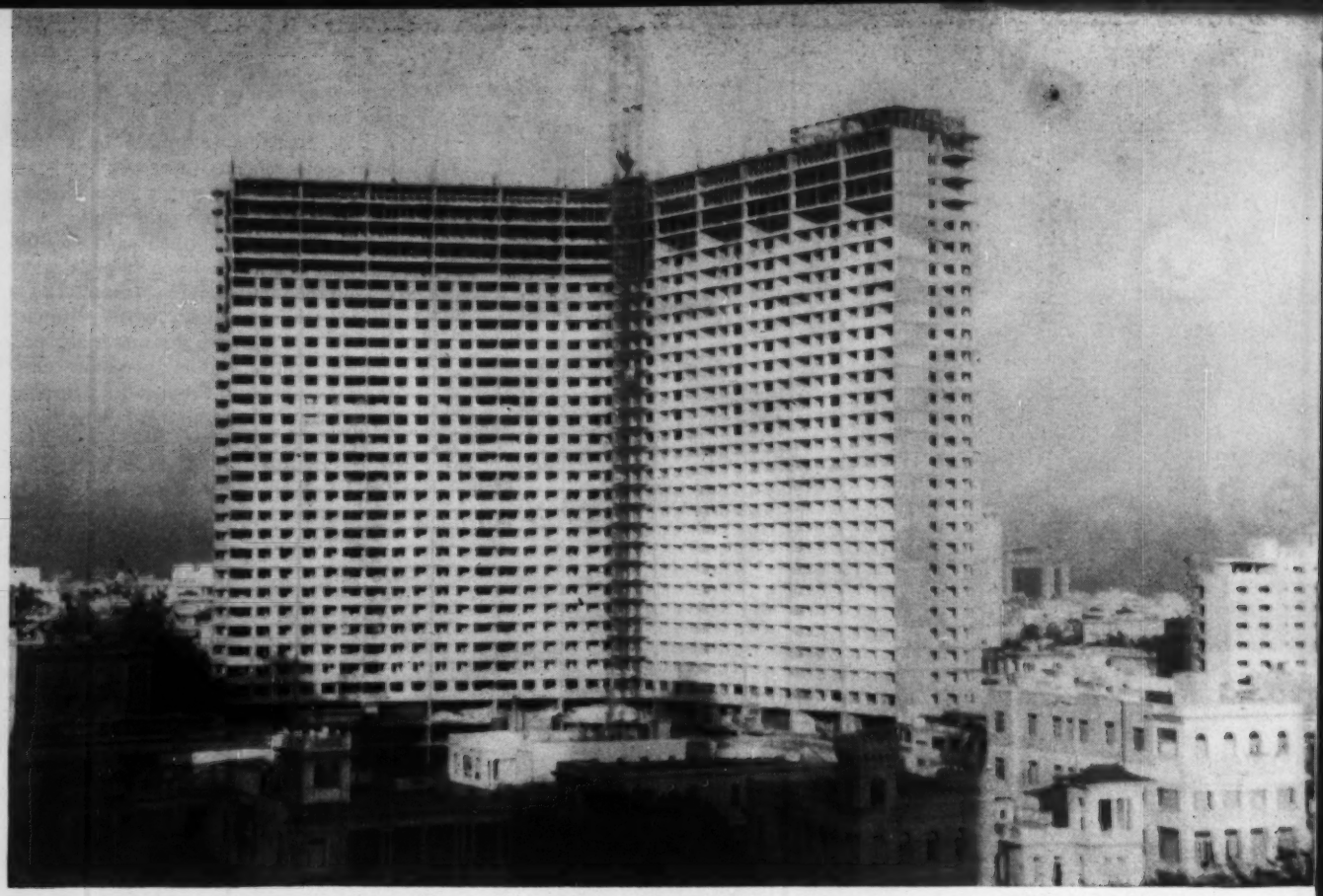
Result was three to four months of good surface before appearance of substantial dust. And cost was about half the heavy oil treatment with no cover course.

• **1954:** The 1953 test was repeated for a second time. And results substantiated conclusions reached after the 1953 test.

• **Summary**—The woods engineer for Weyerhaeuser, in a company report, has summarized the work. He feels that any type of road oil, (such as SC-1A or PS-400), applied without interruption to the logging traffic, must be covered to prevent raveling, pickup, and extra vehicle maintenance. The life of roads treated in this manner is extended by the use of rock surfacing, but the added cost of the material is out of proportion to the added usefulness obtained. If no cover aggregate is used and the roads are under steady traffic, operating costs go up due to the difficulty of cleaning the logging trucks from pickup and splatter of the heavy oil.

Regarding the use of emulsified asphalt and water as a dust palliative, the engineer reports that although such use is still in the experimental stage with his company, proportional results observed to date definitely establish it as by far the least expensive treatment for the dust hazard. He points to three important advantages of this treatment: (1) the ease of adding a shot when sections become dusty; (2) its adhesive quality which minimizes kick-off of surface rock when used; (3) the binding action of its residue. When breakage occurs in a surface having the emulsified asphalt-water treatment, the road merely needs scarifying, leveling with a blade, and settling by light rolling or by normal traffic.

A full report on the results of the Weyerhaeuser test will not be available for several years. By that time, the company will have determined to what degree yearly applications of the diluted asphalt treatment have added to road stability, durability, and tightness.



"17 y M"—A new address in Havana introduces some new dimensions in reinforced concrete apartment building construction.

Concrete Apartment House 39 Stories High

Arthur J. Fox, Jr.
Associate Editor

One of the world's tallest reinforced concrete buildings—with 30 stories of apartments and 39 stories all told, a total of 402 ft—is a striking structure of thin walls and slabs nearing completion in Havana, Cuba.

Called "17 y M" (literally, 17th and M streets) for its street address, this massive honeycomb of a building looms large against Havana's sky, dominating everything about it, including the swank old Hotel Nacional, two blocks away.

It will continue to dominate the scene until the Havana Hilton (still a foundation construction job at 23rd and M) rises to its ultimate 32-story height to compete for prominence among the world's—not alone Cuba's—tallest reinforced concrete structures.

(In Sao Paulo, Brazil, a 34-story bank-office building retains title as the world's tallest reinforced concrete building. It rises close to 475 ft above the street, even excluding a 31-ft 10-in. concrete tower on its roof. See ENR Sept. 2, 1948, p. 72.)

• **New dimensions in concrete**—"17 y M" is unusual in many ways.

• First there is its height: It rises 402 ft above its footings.

• Second, its framing: Bearing walls separating the apartments on each level carry the two-way slab floors. Floors are 6¾ in. thick and walls are 11 in. The bearing walls are solid, except in the basement and lobby floors, where they have portals in them for access, and in the top few floors of the building, where lower bearing pressures permit open spaces in the cast-in-place bearing walls, to be filled with concrete block.

• Third, its general plan: Its three wings form a broad, flat Y, with long branches extending out from a short stem.

• Fourth, its floor plan: All apartments have cross-ventilation. Those in the stem of the Y and at its extremities will have three exposures.

• Fifth, its exterior corridors: Residents' corridors are on the outside of the building between floors, so that each corridor serves two levels. And between alternate pairs of residents' corridors are service corridors, each serving four floors. Thus, on the outside of the building there will be three corridors for each group of four floors.

• Sixth, "17 y M" is being sold while it is built, under Cuba's new "Horizontal Property Law," a device used in Europe and Latin America, similar to U. S. co-op apartments, yet different in certain legal respects.

• **Grew like Topsy**—"17 y M" was not planned to match or break any story-

height records. In fact, it was once to have had only 24 floors of apartments. It was pushed higher by its economics.

Although the zoning law permitted it to cover 66% of the block in which it is built, the architects wanted best orientation, best views, and cross-ventilation in all apartments. They devised a plan covering only 25% of the block. This determined the building's floor area per story, and only by adding stories could the architects reach a total salable floor area ("horizontal property" that would make the investment pay). They went eventually to 30 stories of apartments.

Before founding so high and heavy a structure on the Havana limestone, designers made hundreds of feet of borings, and fortunately found the rock sound down as far as 100 ft under the site, with the exception of the south corner of the city block.

Next, the structure was analyzed and submitted to model tests to learn its action under loads, including hurricane-force winds (see p. 37). Structural analysis and design was done by Saenz-Cancio-Martin, directed by Professor Luis Saenz, prominent teacher of structures at Havana University and designer also of a new 300-ft span prestressed concrete highway bridge.

Model analyses proved out the design. The structure is built to resist Havana's worst hurricane force.

• **Founded in rock**—Bearing walls are founded in the porous, but solid limestone. Wall footings of concrete are roughly keystone-shaped in section, 5 to 6 ft deep and 5 to 6 ft across at their top.

Some of the building's greatest stress concentrations occur around trapezoidal openings in the bearing walls in lower floor and basement levels. An accompanying photo shows the density of reinforcing steel around these openings for distribution of the concentrated stresses.

The same photo shows a permanent ramp to street level, by which service trucks will reach swimming and wading pools and an open, garden level of the completed building. The ramp was used for delivery of materials during construction.

• **Block plant in the basement**—All concrete, including block, has been produced right at the building. Builders chose to do this for complete control over production, rather than use one of Havana's central mixing plants. At best, they have been concreting one story per 6-day week (about 23,600 sq ft of floor slab per story); and at the beginning they were working into the night to do it, hauling up forms and materials each evening in preparation for the next day's work.

Materials have been delivered and stockpiled on the level that will be the garden, under which there will be stores, offices and a 500-car garage. During construction this slab was shored for reinforcement to carry the extra weight of stockpiled cement, ag-

STURDY BEARING WALLS at building basement levels are founded in limestone.

AND UP IT GOES—Garden-level slab with ramp to street (right) is temporarily shored to hold stockpiles. Constructors mixed concrete for walls, slabs; made block for partitions.

HEAVY REINFORCING is especially dense where stresses will concentrate around portals in walls at garden level.

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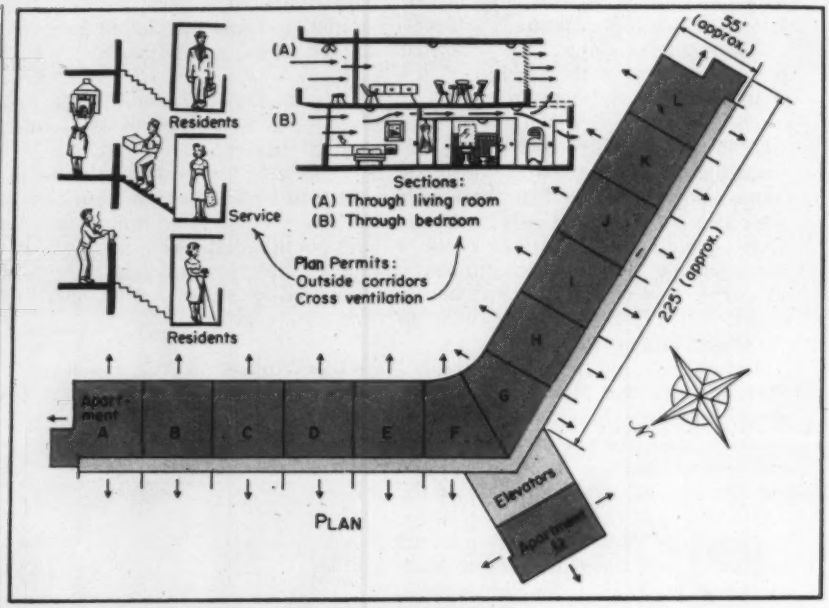


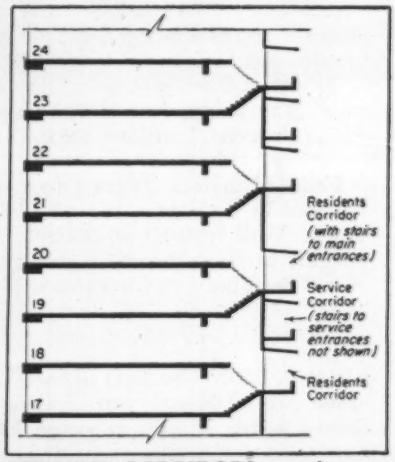
PLANNED FOR VIEW AND VENTILATION—Each apartment has at least two views and cross-ventilation. Terraces face east, outside corridors look west. There are provisions for unit air conditioners, but ample provision for natural ventilation.

gregate and other building materials.

At grade, alongside the building, stands the builder's mixing plant in which all concrete has been produced. And next to the mixing plant towers a hoist, which has taken all concrete to the upper stories.

Concrete mixes to achieve strengths up to 7,000 psi have reportedly been used.

Not all the concrete has gone directly up to the work. A good portion went into the unfinished basement where a block machine has turned out all the concrete block for exterior walls and interior partitions.



OUTSIDE CORRIDORS are between floors: One resident's corridor in every two stories, one service corridor in every four.

• **Floor plans**—"17 y M" will house garages and stores in its lowest three stories. Then, there is to be a story of offices and a garden level, followed by 28 stories of "common" apartments and two stories of penthouse apartments. On top of these will be three stories of restaurant space, plus an observatory level at the very top.

The fifth level, the garden level, will have adult's and children's separate swimming pools.

Four tenant elevators and two service elevators will serve floors including 28 stories of apartments; an express car will serve the penthouse floors alone. Another elevator will serve the restaurant and observatory.

On each floor there are 13 apartments, one in the stem of the Y and six in each branch. The outside corridors extend out the Y branches from the elevator core at its center.

Floor slabs are finished with terrazzo on cinders. Interior partitions and plumbing are placed to form four basic apartment floor plans (although minor modifications can be made to suit purchasers' desires).

Apartments vary from the typical interior layout (1,300 sq ft net, selling for $17,500 at first floor level and $30 more per floor of ascent) to the 3-exposure layout in the base of the Y (1,730 sq ft for $21,500 at the first floor). The largest has seven rooms, three baths and a terrace—counting servant's room, small "service patio."

• **Now selling**—"17 y M" was started early in 1954 and is to be finished about the end of this year. It has had 500 workers on it at one time, with work starting near 6 am and running on until near midnight at times.

This luxury apartment building will cost about six million pesos (the Cu-

ban peso equals the dollar). Framed in steel, it might have cost an extra million, according to quotations of several American and European steel companies. The Cubans figure that when they stick to their own native materials, they have a building cost about one-third that in the U. S.

Ernesto Gomez Sampera and Martin Dominguez are the architects of the building; Bartolome Bestard and Manuel Padron are the civil engineers in charge of construction. These four are also members of the 10-man board of directors of F.O.C.S.A., the promoting company.

Saenz-Cancio-Martin designed the structure; Gustavo Becquer, the water and sanitation systems; and Fernando H. Meneses, the electrical installations. Electrical demands of the building of about 3,000 kva will be fed at 13,200 volts from power lines and transformed for distribution at 120/240 volts. There is also a diesel-electric plant to take care of part of the elevators' load as well as the miscellaneous loads in case of a power company failure.

With "17 y M" now well along toward completion, the owners are satisfied with sales to date of their "horizontal property." With 13 apartments per floor, 30 floors of apartments, roughly $20,000 per apartment, plus all the other rental space, the owners need only sell off about 80% of the structure to get back their costs. In addition to building costs, there was land plus the financing and selling expenses. They are optimistic, with sales expected to pick up as completed apartments go on exhibition.

Analyzing a 39-Story "Egg Crate"

Model analysis figured heavily in design of the unusual slab-and-wall complex that is to be "17 y M", nearing completion in Havana, Cuba, as one of the world's outstanding buildings. And foundation investigations were important, too; 39-stories of reinforced concrete add up to considerable vertical loads.

Prof. Luis Saenz, who directed structural design of the Y-shaped skyscraper, describes the subsurface analyses as having included borings, geologic studies, pits, unconfined compression tests of rock samples, and direct compression tests.

Geologic samples showed all the rock to be of the Pleistocene period, a mixture of limestone coral, consolidated sand and marl—with visible fractures all over.

Unconfined compression tests on over 800 samples showed strengths from 300 psi to 3,000 psi, with about 90% of the area relatively hard and the rest (at the south corner) very porous, soft limestone, though of the same geologic age. Compression tests were performed on the undisturbed rock in three test pits. In the hard rock area, horizontal loads up to 500 tons per sq ft were applied without causing failure. In the soft rock, horizontal loads, similarly applied with hydraulic jacks, reached only 50 tons per sq ft. Accordingly, allowable bearing pressures of 32 tons/sq ft and 10 tons/sq ft were established for the two respective qualities of rock. Foundations were unreinforced concrete placed on the rock.

• **Model studies**—A plywood model was built at 1:100 scale; lead blocks were used as vertical loads, and wind forces were static loads applied horizontally.

The model was subjected to full load, with "wind" applied from four different directions. Deformations, measured on 28 gages reading to 0.01 mm, turned out to be smaller than the calculated deformations, as was expected, says Professor Saenz.

It is estimated that the top edge of the building, under true winds of 150 mph, may move about 4 in.—a deflection of 1/1000 of the building height.

Wind pressure was taken as 60 psf uniformly applied on the total height of the building. (The Miami building code requires 45 psf, the Professor points out.) The pressure-velocity equation used was $p = 0.0026V^2$, and a wind velocity of more than 150 mph was considered.

Vertical live load was taken as 30 psf; the same as for partition wall loads.

Ultimate load design was chosen for calculation of the structure, with the following safety factors:

Axial loads—dead	2.0	live		3.0
	wind	1.5		
Flexural— dead	1.5	live		3.0
	wind	1.33		
Temperature and shrinkage—				1.25

• **Analysis**—Wind analysis was made in its preliminary stage by studying an isolated bent of the structure, using the slope-deflection method to establish 64 equations to solve the 64 unknowns of the bent. Then, according to Professor Saenz, a special method of moment distribution was developed to fit this case to allow for action of the structure as a unit.

• **Design**—In this structure there are vertical slabs (walls) and horizontal slabs (floors).

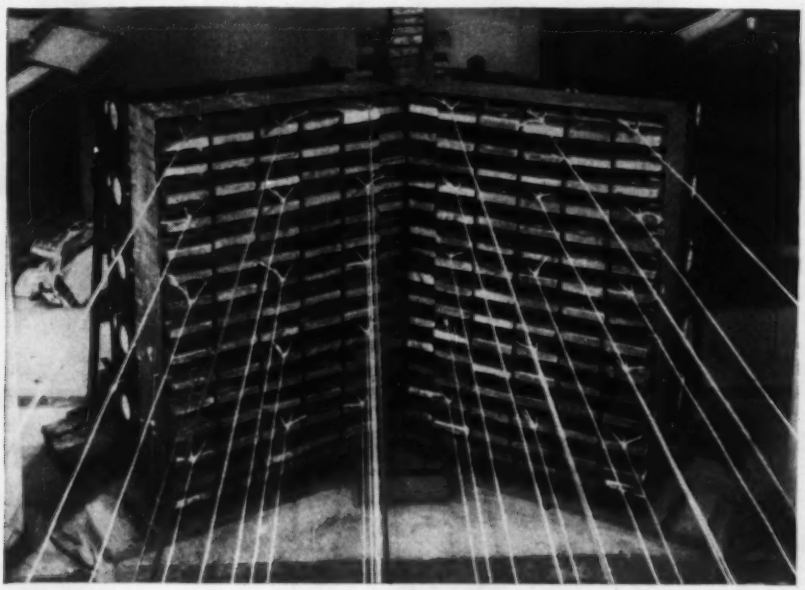
The walls act as columns supporting the full weight of the building, substituting for half the beams in the two-way floor system, serving as partitions between apartments and as wind bracing.

Walls were kept 11 in. thick with a minimum of reinforcing steel by using concrete strengths from 3,000 to 7,000 psi (28-day, 6x12-in. cylinders).

Floors were designed as two-way slabs, moments being calculated by a moment distribution procedure. Result is a span-depth ratio of 52:1. The short span of the slab is 29 ft; slab depth is 6¾ in.

The structure's total height is 402 ft; greatest length without an expansion joint is 450 ft.

Eliminating columns and putting all the building dead load into the walls made it economical to have the walls also conteract horizontal hurricane forces. The resulting cellular building provided the architects with ideal clear floor areas.



LOADED SCALE MODEL—with lead bricks for vertical loads and strings attached to apply horizontal hurricane load—checked computed deformations of structure.

FLEXPLANE'S NEW

proves its superiority

Making second pass over slab on Garden State Parkway in New Jersey, this Flex-Plane Self-Widener "paid for itself in no time at variable width sections."

Note near perfect slab behind Flex-Plane that will require little more than a token pass by a straight edge.

Here's positive proof — the new Flex-Plane Self-Widening Finisher is everything we said it would be. It's the most versatile finishing machine ever built!

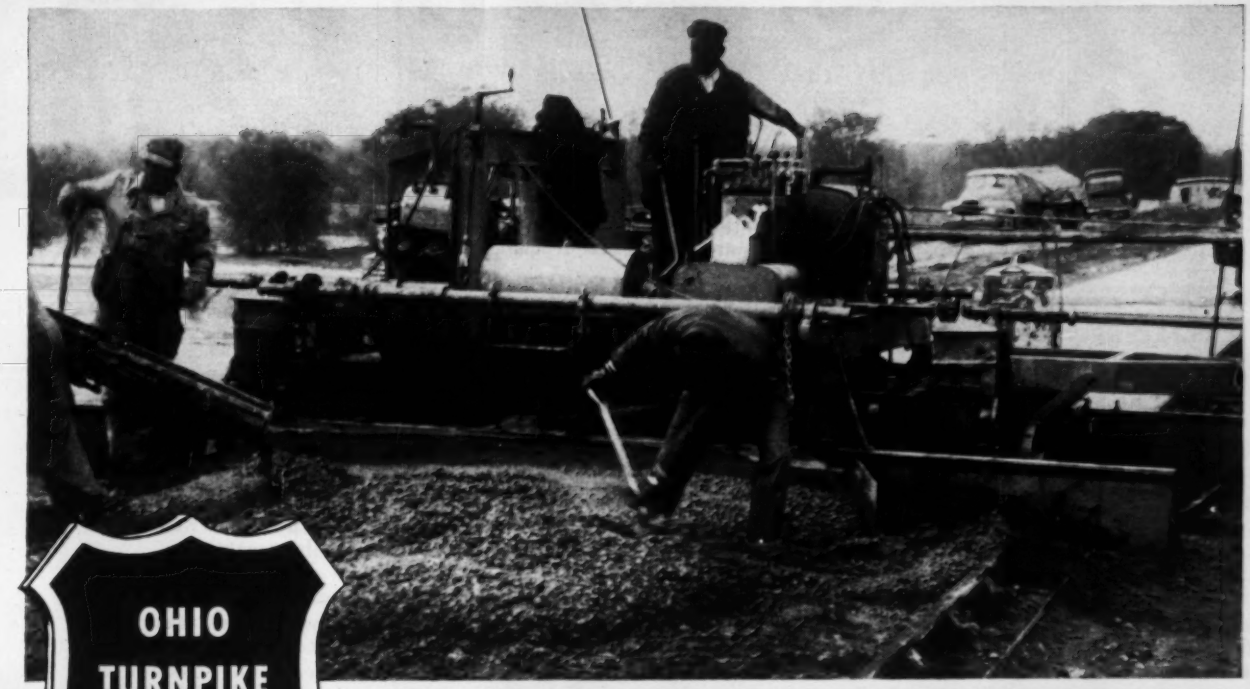
With a flick of the finger the operator can reduce or extend the width of the machine to exactly suit job requirements—an invaluable asset when paving crossroads, aprons, interchanges, passing strips, etc. And, it's accomplished through an entirely new design principal—**the frame widens—not the wheels,** which means the machine sacrifices no strength or rigidity even at its widest setting.

Add to this the unparalleled portability of the

WORLD'S LARGEST BUILDER OF CONCRETE FINISHING

SELF-WIDENING FINISHER...

on two major turnpikes!



"Greatest finisher I've ever seen," said concrete foreman of the new Flex-Plane Self-Widener, as it worked the maze of variable widths on an Ohio Turnpike interchange.

Flex-Plane, the greater power and speed, the improved screed action that all but eliminates handwork, and you have the big reasons why it's the fastest selling machine of its kind. You have only to see it in action—to talk with owners and operators to convince yourself that this new Flex-Plane will outperform any other finisher on the forms today.

Before you buy finishing equipment let us put you in contact with a Flex-Plane owner—and we're certain you'll join the ever increasing list of leading contractors who specify finishing equipment by Flex-Plane.

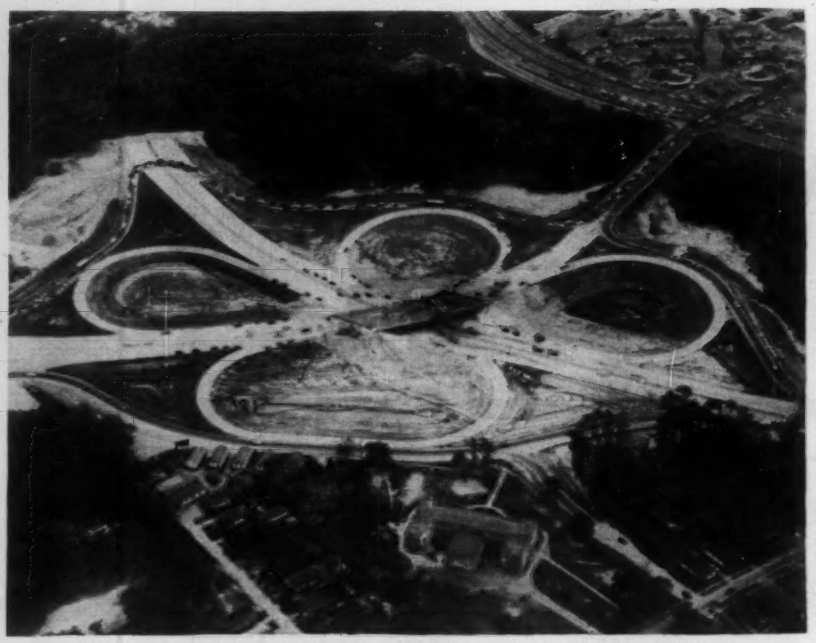
General view of interchange where Flex-Plane's self-widening feature saved "hundreds of man hours."

THE FLEXIBLE ROAD JOINT MACHINE COMPANY

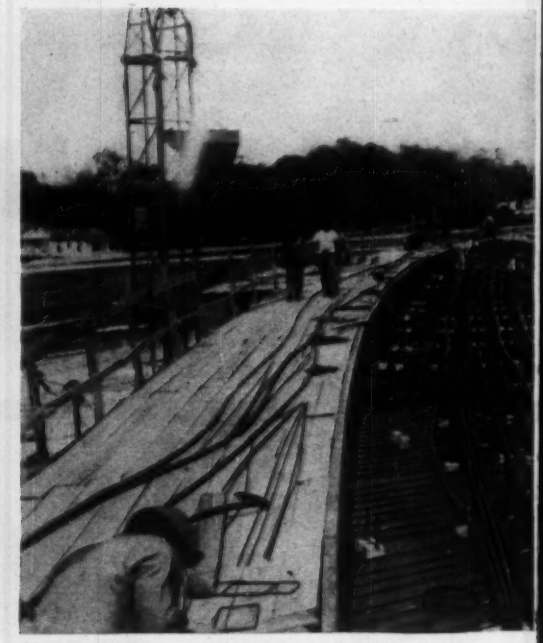
5500 THOMAS ROAD

WARREN, OHIO

EQUIPMENT



HIGHWAY BRIDGE on a curve had to meet stringent clearance requirements, which led to a prestressed, flat-slab design.



DECK FORM supports cables for prestressing the deck and paper tubes for

Flat-Slab Bridge on a Curve Prestressed

Use of prestressed concrete in bridge construction has been extended in several directions simultaneously with the successful prestressing of a unique bridge in downtown Houston, Texas.

The superstructure is a flat slab, continuous over three sets of columns, and the deck follows both horizontal and vertical curves. Column rows are skewed at different angles with respect to the centerline of the bridge, which is curved to a radius of 764 ft. Despite the problems created by continuity, curvature and skewed supports, the deck was prestressed with steel tendons continuous over the full 225-ft length of the bridge. This steel also undulates in a vertical plane to apply upward and downward forces that counteract bending stresses due to loads on the deck.

With little precedent to go by—the curved structure is the first of its type in the U. S.—the designers had to devise a scheme under which friction along the horizontally and vertically curved tendons would not be so large as to make prestressing impractical. They also had to provide for centrifugal forces produced by traffic on the deck.

• **Shallow deck**—The bridge, part of Houston's expanding expressway system, will carry six lanes of highway traffic on Waugh Drive over an extension of Memorial Drive, which it intersects at an angle of about 45 deg. The flat-slab deck is 72 ft wide. It incorporates two roadways separated by a 3-ft-wide median strip and a 5-ft cantilevered sidewalk along both sides. Spans are 45-65-70-45 ft. The ends of the slab are supported on cast steel rockers. Slab thickness is 20 in. in the end spans and increases to 24 in. at the center support.

Cylindrical holes 9 in. in diameter were created with paper forms at mid-depth along the length of the bridge to reduce the dead weight. Solid sections of concrete 6 ft wide were left above the columns, however, and were reinforced with intermediate grade steel to form transverse beam bands. Of the same depth as the slab, these beams distribute the load to the columns in each row.

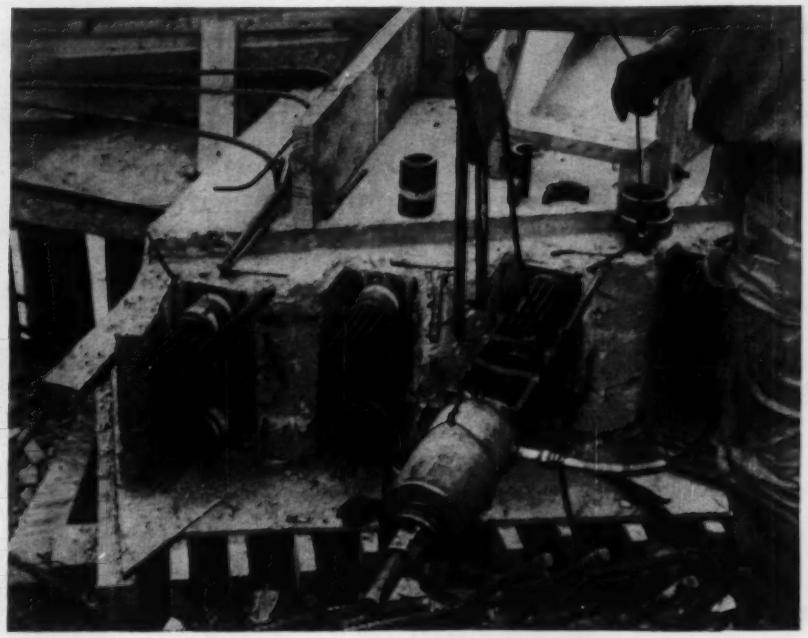
Columns are spaced 15 ft c-c. They are tapered, hollow, elliptical steel shells, ¾ in. thick, filled with concrete. The cross section varies from 12x16 in. at the bottom to 18x24 in. at the top.

To form a rigid-frame structure, the columns are built into the slab. At the bottom, however, they are pinned. The pin bearings, of cast steel, are welded to the columns and bolted to a short concrete pier. The structure rests on steel H-piles.

The pinned column bases will relieve the columns only of longitudinal bending moments. So to prevent transverse moments, due to the skew and centrifugal forces, from acting adversely on the base connections, a conventional rocker was installed with its shaft vertical at the sides of the slab at each end of the bridge. Supports for these rockers, capable of resisting centrifugal and other lateral forces caused by traffic, were built into the bridge abutments.

• **Clearance controls design**—While a number of considerations were involved in selecting prestressed flat-slab construction for this structure, a major reason was the difficulty of getting satisfactory clearance over Memorial Drive with other designs. Buffalo Bayou is so near this expressway that the city of Houston set a minimum elevation for the roadway. This limited the depth of cut. Desirable grades for the ramps of the interchange at Waugh Drive set the maximum elevation of the bridge. Furthermore, Memorial Drive is on a 4-deg curve and Waugh Drive on a 7½-deg curve, requiring the roadways to be superelevated and thus making clearance even tighter at the 45-deg intersection. The designers found that a prestressed flat-slab bridge would be sufficiently shallow to meet clearance requirements.

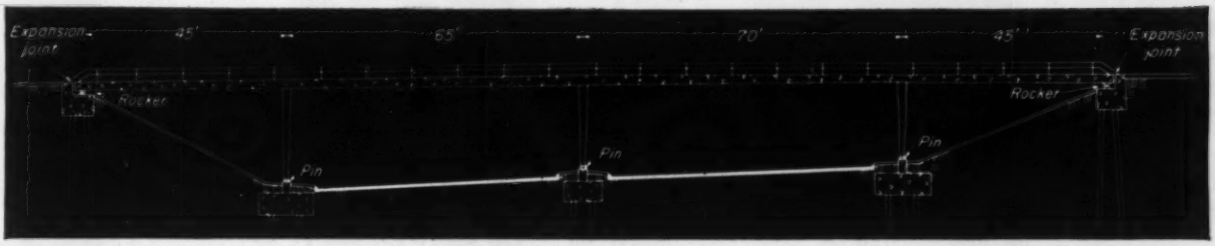
• **Post-tensioned construction**—For prestressing the slab, the general contractor elected to use ¼-in.-dia, high-strength steel wire formed into 8- and 10-wire cables, which are anchored in the ends of the slab. Two heads were pressed on each end of



Photos courtesy Texas Stressed Concrete Corp.

forming cylindrical holes in the slab.

CABLES of 8 and 10 wires laid in groups of three in flexible tubing. Jacks at both ends tensioned the two-headed wires.



CONTINUOUS OVER FOUR SPANS, the slab is supported at the ends on rockers, in the interior on built-in columns.

the wires. One head was used for anchorage purposes, and the second for applying the prestress with a jack. To prevent bond with the concrete before the tendons were tensioned, each cable was encased in a flexible metal tube and grouted in later. A prestressing subcontractor supplied the wire cut to length and placed it. He also stressed and grouted all the tendons.

The cables were placed on the deck form in groups of three, one above the other. Each group contains 28 wires. To take into account the effect of the skew, the groups are spaced at intervals ranging from 16 in. in the middle 49 ft of the deck to 13 in. in the end strips.

Following anticipated variations in bending stresses along the length of the slab, the cables are draped in a wavy vertical curve, being close to the top of the slab over supports and near the bottom at midspan. The maximum rise is 15 in. The cables also were laid in a horizontal curve to follow the curvature of the deck.

The design requires each 28-wire group to be tensioned with a total force of 93 tons. This is expected to result in a final force of at least 84 tons, allowing for shrinkage and plastic flow of concrete and creep of steel.

• No cracking, low friction loss– Concrete for the entire deck was placed in one operation. To minimize shrinkage cracks, the slab was prestressed to 10% of the design stress (13,600 psi in the tendons) when the concrete was five days old. When the concrete was 28 days old and had attained a strength of 5,000 psi, the full design prestress (136,000 psi in the tendons) was applied and the forms were stripped. Prestress was applied simultaneously at both ends of the wires to reduce friction losses. The wires were held in the stretched position by cylindrical steal shims inserted between one of the wire heads and a steel bearing plate in the slab.

Prestressing force was measured with a calibrated gage mounted on each jack. Also, elongations were checked to see if any appreciable amount of friction was being developed.

Each cable was overstressed about 10% to overcome friction. It was actually possible to "see" the release of friction, because the gage pressure would fall off and at the same time a greater elongation of the tendons would be noted. Cables were elongated about 6½ in. at each end, and the measured elongations checked with computed elongations within ⅛ in., indicating that friction losses were negligible.

After another 14 days, each cable was checked to see if it had lost any stress and if necessary, to compensate for the loss. But none were found to have lost any measurable amount in that time.

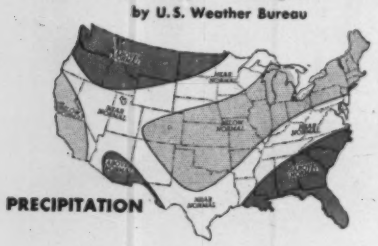
After the tendons were anchored at the ends of the slab, grout was applied under pressure at one end of each metal tube until it emerged from the far end. The grout openings then were plugged. The grout was left to harden before end caps were cast over the shimmed end anchorages.

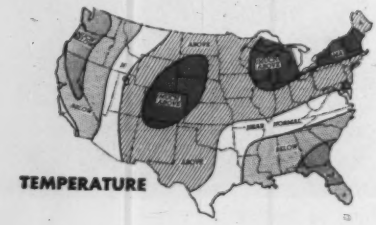
Information for this article was supplied by Francis Niven, consulting engineer, Houston, who designed the bridge, and Ted J. Gut, vice president of the Texas Stressed Concrete Corp., Austin, Texas, the prestressing subcontractor. Constructors Inc., Houston, is the general contractor.

WEATHER

30-DAY WEATHER OUTLOOK

Mid-July to mid-August
by U.S. Weather Bureau





Observed weather in 20 cities, compared with normals

	Precipitation, inches				Temperature, degrees			
	June 1955	Departure fr. normal	6 Mos. 1955	Departure fr. normal	June 1955	Departure fr. normal	Av. daily maximum	Av. daily minimum
Atlanta	3.50	−0.52	22.42	−5.00	72.9	−4.8	83.5	62.2
Baltimore	6.73	+3.21	17.72	−3.81	68.5	−3.7	78.3	58.6
Birmingham	2.06	−2.15	28.62	−0.44	72.4	−5.0	83.9	60.8
Boston	3.52	+0.04	19.08	−0.63	66.8	−0.4	75.1	58.5
Chicago	3.04	−1.11	13.95	−2.78	69.1	−0.3	78.6	59.5
Cincinnati	1.73	−2.32	22.50	+1.21	68.5	−4.3	78.7	58.3
Cleveland	2.68	−0.39	21.90	+5.98	67.9	−1.5	79.4	56.4
Dallas	4.63	+1.18	15.73	−4.46	78.8	−3.1	89.5	68.1
Denver	1.52	+0.07	5.03	−2.68	64.8	−2.5	76.6	53.0
Detroit	1.87	−1.03	11.32	−4.73	68.1	+0.4	78.2	58.5
Kansas City	4.71	−0.31	19.92	+1.78	71.3	−4.1	79.8	62.8
Los Angeles	0.01	−0.06	9.05	−0.56	66.7	−1.1	75.3	58.1
Minneapolis	1.53	−2.73	5.67	−6.79	68.2	0.0	77.9	58.4
New Orleans	1.44	−4.13	25.78	−6.19	80.4	−1.5	88.6	72.2
New York	2.11	−1.53	14.30	−6.28	68.6	−1.3	76.2	60.9
Philadelphia	4.06	+0.19	14.64	−5.90	69.2	−2.9	78.7	59.6
Pittsburgh	3.94	+0.11	16.67	−2.70	67.6	−4.1	77.3	57.9
St. Louis	2.68	−1.12	14.44	−5.31	72.5	−3.3	81.0	63.9
San Francisco	T	−0.15	7.05	−5.41	57.0	−2.1	62.7	51.3
Seattle	1.66	+0.41	11.82	−4.13	59.6	−2.2	67.5	51.6

T traces (less than 0.005 inches)

Precipitation range in 20 cities, in inches

Table shows range observed 33.3% of time. Rainfall heavier 33.3% of time, lighter 33.3% of time.
Computed by U. S. Weather Bureau (based on historical records of actual precipitation)

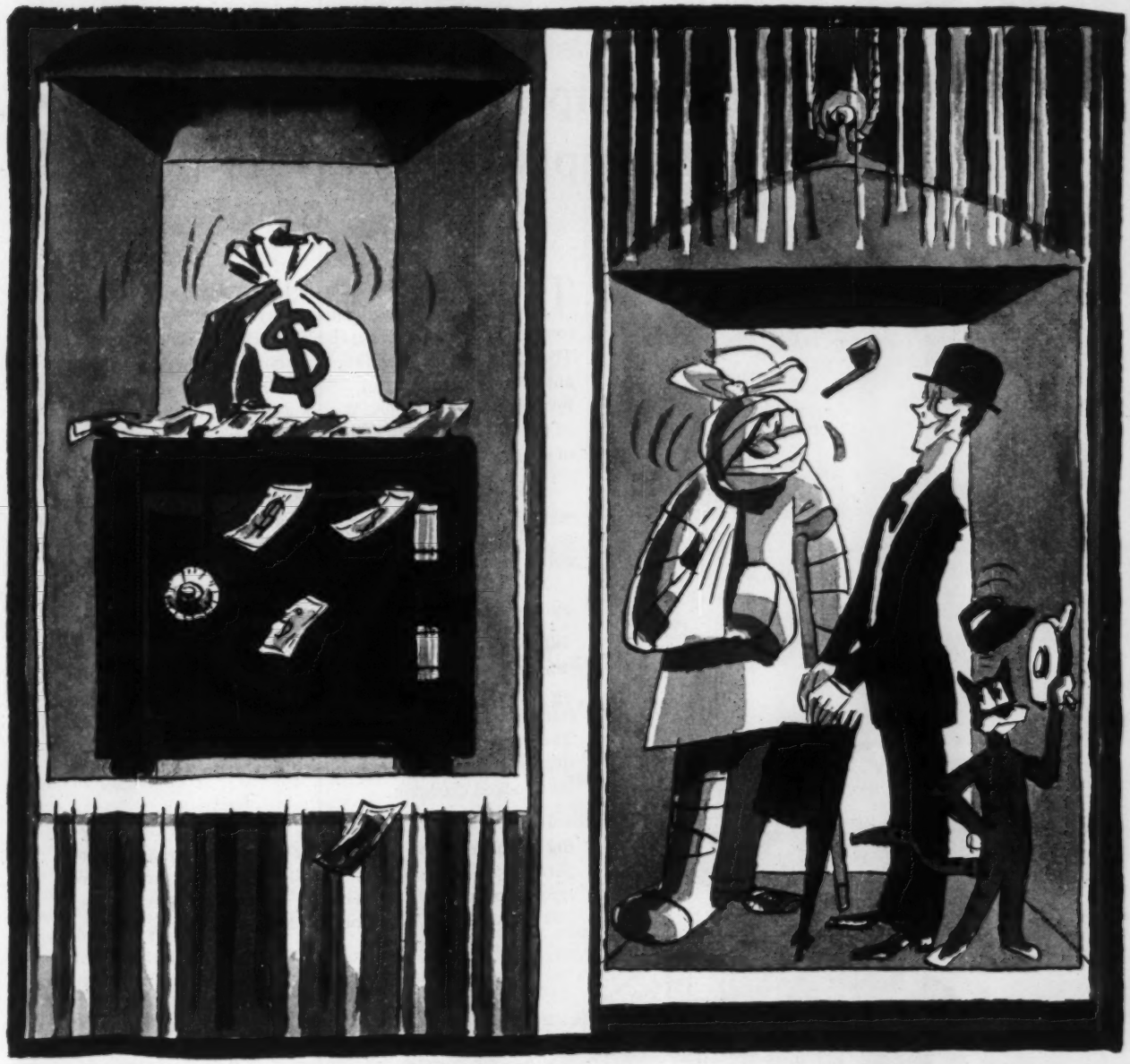
City	July	Mid July-Mid Aug.	Aug.	Mid Aug.-Mid Sept.	Sept.*	Mid. Sept.-* Mid. Oct.	Oct.	Mid. Oct.-Mid. Nov	Nov.	Mid Nov.-Mid Dec.	Dec.	Mid Dec.-Mid Jan.	Jan.	Mid Jan.-Mid Feb.
Atlanta	2.99/4.80	2.89/4.90	2.79/5.00	2.24/4.30	1.69/3.60	1.64/3.35	1.59/2.90	2.01/3.38	2.43/3.85	2.94/4.58	3.46/5.30	3.42/5.32	3.39/5.33	3.38/5.50
Baltimore	2.61/4.98	2.91/5.32	3.20/5.66	2.65/4.51	2.10/3.36	1.88/3.57	1.66/3.77	1.16/3.45	1.56/3.12	1.99/3.43	2.41/3.73	2.59/3.85	2.77/3.96	2.57/3.68
Birmingham	3.94/5.53	3.44/5.39	2.92/5.25	2.32/4.47	1.71/3.69	1.62/3.14	1.52/2.58	1.84/3.24	2.17/3.91	2.94/4.83	3.71/5.75	3.75/5.58	3.75/5.40	3.61/5.64
Boston	2.61/4.02	2.60/4.36	2.59/4.70	2.32/4.20	2.04/3.70	2.26/3.88	2.49/4.07	2.62/4.26	2.74/4.46	2.82/4.33	2.89/4.20	2.83/4.12	2.39/3.45	2.70/3.99
Chicago	2.49/3.65	2.31/3.65	2.13/3.65	2.11/3.70	2.09/3.75	1.84/3.42	1.59/3.10	1.59/2.95	1.59/2.80	1.46/2.62	1.32/2.45	1.30/2.28	1.29/2.10	1.40/2.16
Cincinnati	2.39/3.70	2.32/3.95	2.24/4.20	2.02/3.64	1.79/3.08	N.A.	1.49/2.90	1.74/3.28	1.99/3.67	2.14/3.48	2.29/3.28	2.32/3.54	2.34/3.80	2.07/3.40
Cleveland	2.47/4.08	2.15/3.84	1.83/3.60	2.07/3.51	2.30/3.41	2.03/3.29	1.75/3.16	1.79/2.97	1.82/2.77	1.76/2.68	1.70/2.56	1.65/2.58	1.59/2.60	1.55/2.52
Dallas	1.39/3.00	1.30/2.89	1.22/2.78	1.50/2.94	1.77/3.10	1.66/3.30	1.55/3.50	1.60/3.25	1.64/3.00	1.36/3.00	1.09/3.00	1.24/3.05	1.39/3.10	1.49/2.70
Denver	1.21/2.00	1.04/1.86	0.87/1.73	0.60/1.39	0.52/1.05	0.57/1.08	0.62/1.10	0.46/0.89	0.29/0.68	0.34/0.72	0.39/0.77	0.28/0.64	0.19/0.50	0.26/0.54
Detroit	2.09/3.70	1.94/3.54	1.79/3.38	1.80/3.41	1.82/3.44	1.72/3.02	1.63/2.69	1.70/2.66	1.77/2.78	1.70/2.66	1.64/2.60	1.63/2.50	1.62/2.40	1.56/2.45
Kansas City	2.77/4.69	2.74/4.84	2.70/5.00	2.84/5.00	2.99/5.00	2.34/4.54	1.69/4.07	1.48/3.21	1.27/2.35	1.02/1.95	0.77/1.55	0.68/1.48	0.59/1.42	0.80/1.66
Los Angeles	0.00/T	0.00/T	0.00/T	0.00/0.02	T/0.03	0.08/0.32	0.15/0.60	0.20/0.95	0.26/1.30	0.70/2.00	1.14/2.70	1.19/3.00	1.24/3.30	1.12/3.25
Minneapolis	2.14/4.00	2.10/3.85	2.19/3.70	2.24/3.78	2.29/3.85	1.79/3.15	1.29/2.45	0.98/2.01	0.67/1.57	0.62/1.44	0.57/1.30	0.60/1.19	0.64/1.08	0.58/1.08
New Orleans	5.37/7.40	4.90/7.08	4.44/6.75	3.78/6.12	3.11/5.50	2.55/4.81	1.99/4.12	2.34/4.40	2.69/4.67	2.96/4.92	3.24/5.17	3.36/5.28	3.49/5.40	3.14/5.05
New York	3.26/4.70	2.99/4.95	2.89/4.70	2.46/4.30	2.21/3.40	2.15/3.76	2.09/4.13	2.15/4.04	2.21/3.95	2.42/3.86	2.64/3.77	2.55/3.71	2.46/3.65	2.41/3.88
Philadelphia	3.19/4.37	2.99/4.91	2.79/5.45	2.44/4.62	2.09/3.90	2.04/3.85	1.99/3.80	2.18/3.65	2.36/3.50	2.50/3.70	2.64/3.90	2.60/3.80	2.57/3.70	2.57/3.69
Pittsburgh	2.72/4.50	2.52/4.15	2.32/3.80	2.20/3.30	1.87/2.80	1.58/3.00	2.09/3.20	1.96/2.96	1.84/2.72	1.96/3.00	2.09/3.27	2.12/3.20	2.14/3.13	1.96/2.98
St. Louis	2.41/4.25	2.28/4.18	2.14/4.11	2.12/3.84	2.09/3.58	1.89/3.42	1.69/3.25	1.78/3.28	1.86/3.30	1.70/3.05	1.64/2.80	1.52/2.75	1.39/2.70	1.48/2.80
San Francisco	0.00/0.01	0.00/0.00	0.00/0.00	0.00/0.13	0.00/0.26	0.10/0.73	0.19/1.20	1.12/2.25	1.04/3.30	1.62/4.28	2.19/5.25	2.34/5.12	2.49/5.00	2.24/4.86
Seattle	0.19/0.67	0.18/0.78	0.18/0.90	0.62/1.55	1.07/2.20	1.70/2.85	2.32/3.50	3.07/4.55	3.82/5.60	4.00/5.74	4.17/5.89	4.14/5.57	4.12/5.25	3.34/4.92

T—Traces (Less than 0.005 inches)

Mean temperature range in 20 cities, in degrees F.

Table shows range observed 25% of time. Mean temperature higher 37.5% of time, lower 37.5% of time.
Computed by U. S. Weather Bureau (based on historical records of actual temperature)

City	July	Mid July-Mid Aug.	Aug.	Mid Aug.-Mid Sept	Sept.	Mid. Sept.-Mid. Oct.	Oct.	Mid. Oct.-Mid. Nov.	Nov.	Mid Nov.-Mid Dec.	Dec.	Mid Dec.-Mid Jan.	Jan.	Mid Jan.-Mid Feb.
Atlanta	79.0/79.9	78.9/79.9	78.6/79.1	76.3/78.1	72.9/75.4	68.2/70.2	62.3/63.8	56.6/58.2	51.1/52.7	46.6/48.4	44.0/46.0	48.3/50.3	43.5/45.5	44.0/46.4
Baltimore	76.2/77.5	75.5/77.3	73.6/75.7	71.1/73.3	67.1/69.4	62.2/64.4	56.4/58.3	50.9/52.6	45.6/47.0	40.2/42.0	35.8/37.8	34.2/36.1	33.9/35.7	33.2/36.0
Birmingham	78.9/80.0	79.0/80.3	78.5/79.8	76.6/78.5	73.3/75.6	68.5/70.7	62.2/64.2	56.2/58.5	50.7/53.2	46.5/48.9	44.3/46.5	43.4/46.1	43.5/46.5	44.4/47.6
Boston	70.2/74.1	72.1/73.4	70.9/72.1	67.6/69.2	63.3/65.4	58.9/61.0	54.2/56.2	49.3/51.3	43.6/45.6	36.8/39.2	31.2/34.0	28.9/31.9	30.3/31.2	26.4/29.6
Chicago	73.7/75.1	73.8/75.4	71.7/72.0	68.8/70.7	64.5/66.7	59.3/61.7	52.8/55.3	45.9/48.6	38.6/41.5	31.2/35.0	25.7/30.3	23.7/28.5	23.2/28.1	23.1/28.1
Cincinnati	74.1/75.8	73.9/75.7	72.5/74.4	70.2/72.1	66.5/68.4	61.2/63.3	55.9/57.1	48.6/50.9	42.0/44.5	35.9/39.1	31.4/35.2	30.1/34.4	29.8/34.6	29.9/34.4
Cleveland	72.7/74.2	72.5/74.2	70.9, 72.7	68.5/70.6	64.7/67.1	59.5/61.8	53.5/55.6	47.1/49.3	40.5/42.7	34.3/37.2	29 3/32.9	27.3/30.9	26.9/30.5	26.0/29.6
Dallas	84.5/86.4	85.6/87.3	85.1/86.7	82.3/83.9	78.1/79.7	73.8/75.1	68.5/69.4	61.4/63.1	54.3/56.7	49.9/52.3	47.0/49.3	44.8/48.1	44.1/47.5	45.8/49.2
Denver	72.1/73.7	72.5/74.0	71.8/72.2	67.3/78.6	62.2/63.4	56.7/58.3	50.8/52.8	44 5/47.2	38.0/41.4	33.5/36.7	30.5/33.5	28.3/31.4	27.0/30.0	27.9/31.5
Detroit	72.5/73.5	72.3/73.6	71.0/72.5	67.5/69.5	63.0/65.6	57.8/60.2	51.9/54.1	45.8/47.9	39.2/41.1	32.9/35.3	27.9/30.9	25.6/28.5	24.8/27.7	24.2/27.8
Kansas City	80.0/81.5	80.2/81.8	78.4/80.1	74.6/76.6	69.7/71.9	64.4/67.0	58.1/61.2	50.7/53.9	42.6/45.9	36.7/40.1	32.4/35.9	30.4/33.0	30.0/31.9	30.2/33.6
Los Angeles	66.9/68.4	67.5/68.9	67.4/68.6	66.8/68.1	65.9/67.3	64.4/65.9	62.7/64.2	60.5/62.1	57.9/59.8	56.5/58.2	54.9/56.5	53.4/54.8	52.7/54.0	53.6/54.3
Minneapolis	72.9/74.9	73.2/75.0	70.8/72.3	66.3/68.4	61.0/63.6	55.5/58.3	49.8/51.7	40.4/44.5	30.9/36.0	24.5/28.1	17.2/22.3	13.8/18.4	13.4/16.5	13.3/17.7
New Orleans	81.4/82.3	81.8/82.7	81.8/82.7	80.8/81.9	78.5/79.7	75.1/76.5	70.5/71.9	64.6/66.8	59.0/61.5	56.0/58.5	54.6/56.8	53.2/56.0	52.6/56.0	54.6/57.4
New York	75.2/76.3	75.1/76.3	73.6/74.9	71.0/72.5	67.4/69.0	62.7/64.3	57.0/58.6	51.8/53.2	46.5/47.9	40.2/42.3	34.6/37.5	34.5/35.2	32.0/34.6	30.9/33.6
Philadelphia	75.8/76.6	75.1/76.3	74.5/73.3	72.1/70.6	66.8/68.5	61.6/63.5	55.6/57.6	50.3/52.3	45.3/47.2	39.9/42.0	35.1/37.3	32.7/35.4	31.8/35.0	31.1/34.3
Pittsburgh	71.4/72.8	71 0/72.4	69.3/70.9	67 2/68.9	64.0/65.9	58.8/60.9	52.0/54.4	46.2/48.2	40.3/42.0	34.0/36.4	29.5/32.6	24.8/28.0	26.9/30.1	26.4/30.5
St. Louis	78.7/80.2	78.5/80.1	76.7/78.5	73.6/75.6	69.1/71.2	64.0/66.3	58.1/60.5	51.0/53.9	43.6/46.9	37.6/41.2	33.3/37.1	30.9/35.1	30.1/34.7	31.3/35.7
San Francisco	59.7/60.9	59.5/60.7	60.1/61.2	60.9/62.2	61.3/62.8	60.4/62.0	58.5/60.2	56.4/57.9	53.8/55.0	50.7/52.3	48.7/50.2	47.1/48.9	46.9/49.1	48.3/50.8
Seattle	63.6/64.6	63.8/65.0	62.7/64 1	60.8/62.0	58.0/59.0	54.8/56.1	51.0/52.5	41.8/43.8	43.1/44.5	41.0/42.4	39.4/40.7	37.7/39.0	37.2/38.5	38.2/40.0



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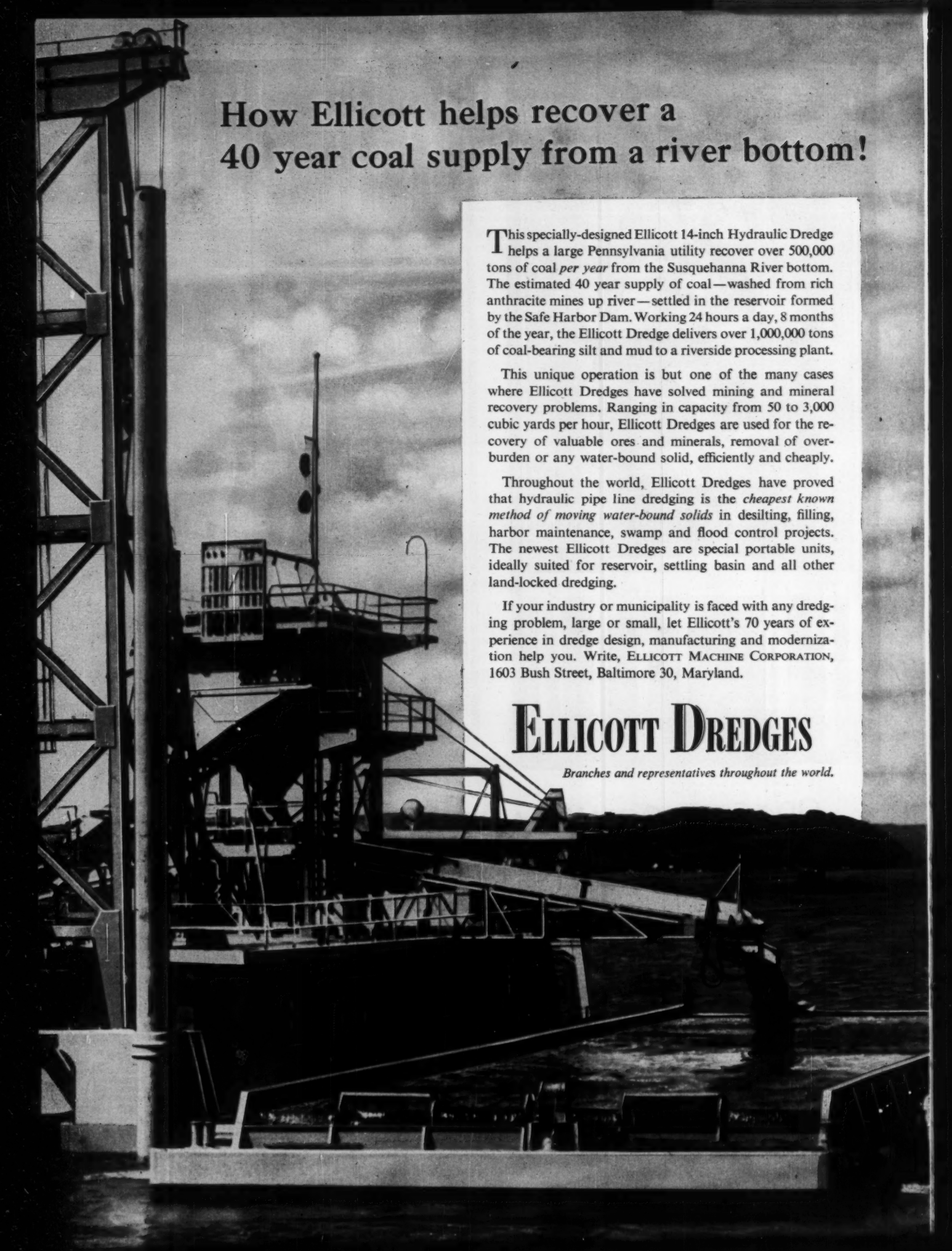

How Ellicott helps recover a 40 year coal supply from a river bottom!

This specially-designed Ellicott 14-inch Hydraulic Dredge helps a large Pennsylvania utility recover over 500,000 tons of coal *per year* from the Susquehanna River bottom. The estimated 40 year supply of coal—washed from rich anthracite mines up river—settled in the reservoir formed by the Safe Harbor Dam. Working 24 hours a day, 8 months of the year, the Ellicott Dredge delivers over 1,000,000 tons of coal-bearing silt and mud to a riverside processing plant.

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If your industry or municipality is faced with any dredging problem, large or small, let Ellicott's 70 years of experience in dredge design, manufacturing and modernization help you. Write, ELLICOTT MACHINE CORPORATION, 1603 Bush Street, Baltimore 30, Maryland.

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FROM THE COLISEUM which he built, local contractor Henry George views Spokane and reflects upon a busy career.

IN CLOSE TOUCH with every phase of the operations, George goes over estimates with one of the three sons in his business.

It's No Wonder Spokane Has Confidence In Its Veteran Contractor Henry George

Spokane citizens flocking this summer to their new $2.7 million municipal Coliseum can thank, as much as any man, a busy local contractor named Henry George. For it was his low bid on the general contract that made a completely equipped Coliseum possible when the city was scraping for funds.

The 71-year-old George had worked with other civic leaders to put across a $2-million bond issue for the Coliseum, after attempts had failed for more than 25 years. He knew that with the funds that had been raised the city might only be able to build a shell that would have to wait for equipment. When bids were opened in the City Council chamber, other contractors held their breath when they heard George's figure. They understood immediately that in his bid ($1,079,813), he had deliberately cut costs to make sure the building could be put up for the money the city had, and to be sure he would have the honor of doing the job. The next lowest of nine bids was $1,148,000.

Today George will not admit how much money he lost on the contract (probably around $60,000). All he will say is: "We got it built, didn't we?" Built it is, and, partly as a result of George's gesture, magnificently equipped for everything from ice hockey to ballet.

For his bid, George gave the city a 423 x 230-ft building, which some feel will draw "a million dollars a year in business to Spokane and help everyone from the banker to the bootblack." In planning the concrete structure, architect's engineer Robert B. Hyslop worked for "extreme flexibility" to balance varied community uses.

The pride of many, the Coliseum contains 8,500 yd of concrete, 245 tons of structural steel, 495 tons of reinforcing steel, one of the first Reynolds acoustical ceilings in the West, 8.5 miles of copper piping for ice-making and removal, a 60-foot stage, a postless interior, seating capacity ranging from 5,000 for basketball to 9,000 for a concert, and paved parking areas to accommodate 2,000 cars.

In typical fashion, George finished the structure in nine months—in time to house the 1954 National Grange convention and to meet the city's tight dedication week schedule. The ceremonies had been scheduled months before, because everyone knew George would finish the building when he said he would. In fact, his painting crews finished the last coat of interior paint only 25 minutes before the Coliseum opened for first-night visitors—using a vinyl-base paint that dried before ushers collected the first tickets.

•A vigorous boss—The Coliseum is far from being Henry George's farewell performance in Spokane, where he has been a contractor for nearly 45 years. He tours his local projects daily, keeps regular office hours, and remains the dominat member of his firm. His biggest job in Spokane right now is the $1.5 million Shopping Center building, which will include a big Pigeon Hole Parking garage with a capacity of 432 cars.

VISITING all nearby projects for a personal look is part of his daily routine.

George is a vigorous boss, with twinkling eyes that offset a gruff voice and peremptory manner. He is still an active hunter and fisherman, and he likes to follow Pacific Coast Conference football by car with his three sons. But some of his Spokane workers would have been nonplused to see him in the Metropolitan Museum of

Art while on his way through New York City this spring. He had come especially to see a newly-displayed El Greco and a Whistler collection.

• **Urge to build**—It's not really so striking, however, that a man who has always been interested in putting things together should be interested in art. Ever since he can remember, George has had an "urge to build things." After graduating from the University of Michigan, he worked for telephone companies and came West as an engineer with Pacific Telephone & Telegraph Co. But his urge nudged him into the construction business for himself.

In 1912 he started in Spokane with a partner, Robert Alloway, by contracting to build a $3,000 concrete substation. Henry George can still quote today some of the cost estimates from that job. Alloway & George went on to build a good many Spokane landmarks. Legally, the firm's name was Alloway & Georg. But in 1944, George announced through the newspapers that he had lost a long battle—the fight to spell his name right. So he added an "e," as everybody else had been doing.

In 1945, several years after his partner's death, George formed a new partnership, taking in his three sons (John C., Henry S., and Lloyd) as partners. Then the postwar building boom reached Spokane. Henry George & Sons, whose slogan is "Building with Spokane," has been scrambling to make deadlines since.

• **A careful bidder**—"The secret of success in contracting," says George, "is being right." He insists that every item, from one dollar upward, be figured in the bid, through all stages of the work. His estimators count every nut and bolt in the architect's plans.

George has built all kinds of structures, from churches, theaters, and schools to grain elevators, factories, stores, and office buildings. During World War II he built on a joint-venture basis much of the rail trackage at a nearby supply depot. One of his wartime jobs was a 14-acre aircraft repair plant at Fairchild Air Force Base. He says this job gave him the biggest kick of his career, because of its size and because it was something different and challenging.

Over his office door George keeps a slogan—"A contract is a conrtact." Nobody in Spokane doubts that he means it. And no one has ever complained that the George firm built a poor building.

JCA Reassignments

Gen. George J. Nold ends two years as director

Maj. Gen. George J. Nold has returned to the United States after serving for two years in Paris as director of the Joint Construction Agency. His successor is Maj. Gen. Bernard L. Robinson, former Deputy Chief of Engineers for Construction (ENR June 23, p. 57).

Gen. Nold's transfer is one in a series of reassignments affecting key personnel in JCA, U. S. European Command organization which handles the multi-million-dollar U. S. military construction program in France.

Before going to Paris in 1953, Gen. Nold, who will retire later this year, served for two years as Deputy Chief of Engineers. He became an officer in the Corps of Engineers shortly after receiving his civil engineering degree from Purdue University in 1917.

In the course of his career, which has included both civil and military engineering, Gen. Nold has been division engineer for the North Atlantic Division and Assistant Chief of Engineers for military construction. He has served with the 1st and the 10th Armies, and has seen duty in Hawaii, Alaska, the Aleutians and Okinawa.

Other reassignments:

• Col. Duncan Hallock, JCA Executive Officer and former Port District Engineer—returns to the United States to assume duties with Headquarters Third Army, Fort McPherson, Ga.

• Col. Herbert N. Turner, former Engineering Division Executive Officer—takes over as Executive Officer.

• Col. Julian V. Sollohub, JCA Planning Division Chief since inception of the unit—assigned to the Army War College, Carlisle Barracks, Pa.

• Capt. George S. Robinson, CEC, USN, Chief of the JCA Operations Division—returns to the United States for duty with Bureau of Aeronautics.

• Col. Ralph F. Gallogly, USAF, Northeast District Engineer—reassigned to Third Air Force, England.

• Col. Edward E. Murphy, after serving as District Engineer in Milwaukee, Wis.—becomes the Northeast District Engineer.

Among others who have returned from JCA duty are Cmdr. Howard B. Gates, Jr., chief of the Navy Plans Branch, and Major Stanley Boriss, chief of the Procurement Branch.

GEN. GEORGE J. NOLD returns to U. S. after serving as JCA director.

Colleges Receive Grants For Science, Engineering

Recognizing the growing need for industrial assistance to colleges and universities, The Dow Chemical Company, Midland, Mich., has increased its educational grants for the advancement of science and engineering. Gifts for the academic year 1955-56 totaled over $300,000.

Although many of the awards have been earmarked for fellowships and scholarships in special fields, over half the funds have been granted to 19 institutions for use without restrictions in their expansion and operating programs.

Embraced in one phase of the Dow assistance program, is a series of scholarships set up to advance scientific teaching at the pre-college level. They were awarded this year to Midland teachers for a six-week summer workshop in science teaching. The course is designed to acquaint teachers with new engineering and scientific developments and opportunities, and to assist them in their work of vocational guidance and teaching.

From Kentucky to Maine

The United States Bureau of Public Roads has named D. C. Brooks as federal district engineer for Maine, effective September 1.

Brooks has been with the federal agency for 22 years, serving during most of this period as design engineer at Frankfort, Ky. Before joining the bureau, he was an engineer with the Kentucky State Highway Department for nine years, and later became secretary of the Kentucky Association of Highway Contractors.

Bottle-Tight Joints . . . Permanence Plus . . . At Low Cost!

. . . With American Roll-On Joint Pipe

BOTTLE-TIGHT JOINTS . . . PERMANENCE and ECONOMY—these are among the advantages of American Roll-On Joint Pipe.

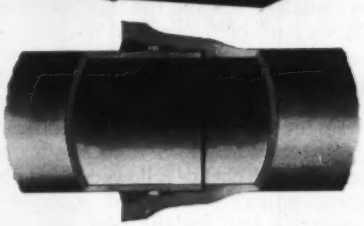
Offering a positive, rubber-under-compression, bottle-tight joint, American Roll-On Joint Pipe can be quickly and easily laid, without bell-holes, and in narrow trenches.

This pipe is produced by the Mono-Cast centrifugal process and possesses the unquestioned strength and durability of cast iron. Highly versatile, it may be used to convey almost any type liquid.

Standard joint materials, including rubber ring, jute and bituminous joint compound are furnished with the Roll-On Joint Pipe, an alternate for standard bell and spigot pipe.

In addition to its other advantages, American Roll-On Joint Pipe is also lower in joint cost . . . laying cost!

The contractor laying the 48" Roll-On Joint Pipe above (for a Texas water supply line), reported laying between 500 feet to 1,000 feet daily. Developed by American Cast Iron Pipe Company and manufactured in sizes 2" through 48", this pipe is included in the new Federal Specification WW-P-421a as the Type II Joint.



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HARRY F. BOWER is sworn in for Defense Services duty at BDSA ceremonies.

Directorship Again Rotates In Commerce Sewerage Unit

Harry F. Bower, of Park Ridge, Ill., has been appointed director of the Water and Sewerage Industry and Utilities Division of the Business and Defense Services Administration, U. S. Department of Commerce. He succeeds Charles W. Krause, of the Neptune Meter Company, New York.

An official of James B. Clow & Sons, Chicago manufacturers of cast iron pipe, valves and other water and sewerage equipment, Bower is on loan to BDSA from his company. Under the BDSA rotation system, key business executives serve the government without compensation for periods of six months or longer.

Bower, a graduate of Ohio University, is a member of the Long Island Water Conference, the American Water Works Association, and the Water and Sewage Manufacturers Association.

Hydroelectric Work Brings AIEE Honors to Engineer

William F. Uhl, president of Charles T. Main, Inc., consulting engineers, Boston, Mass., has been named a Fellow of the American Institute of Electrical Engineers. He was cited "for his contributions to the development and design of hydroelectric plants."

A civil and mechanical engineer, Uhl has spent a large part of his engineering career—which embraces a period of more than 50 years—on the design and construction of hydroelectric plants both here and abroad.

In addition to serving as president of Charles T. Main, Inc., for the last 14 years, Uhl is a managing partner in Uhl, Hall and Rich, who have been retained as consultants to the New York Power Authority on the St. Lawrence River Power Development.

Heads Building Commission

Connecticut's Governor Abraham A. Ribicoff has named Raymond I. Longley as chairman of the newly-expanded State Building Program Commission. Longley has been on the old institutional building program commission since 1947.

Authorized by the recent legislature, the new commission absorbs the functions of the old group, which had jurisdiction over the building activities of 9 of the state's welfare and humane institutions. The broader scope of the new ten-member commission, which will recommend building projects to the 1957 Legislature, covers the University of Connecticut, state teachers' colleges, and all state construction except highways.

U. S. Road Engineer Ends Long Career in Kentucky

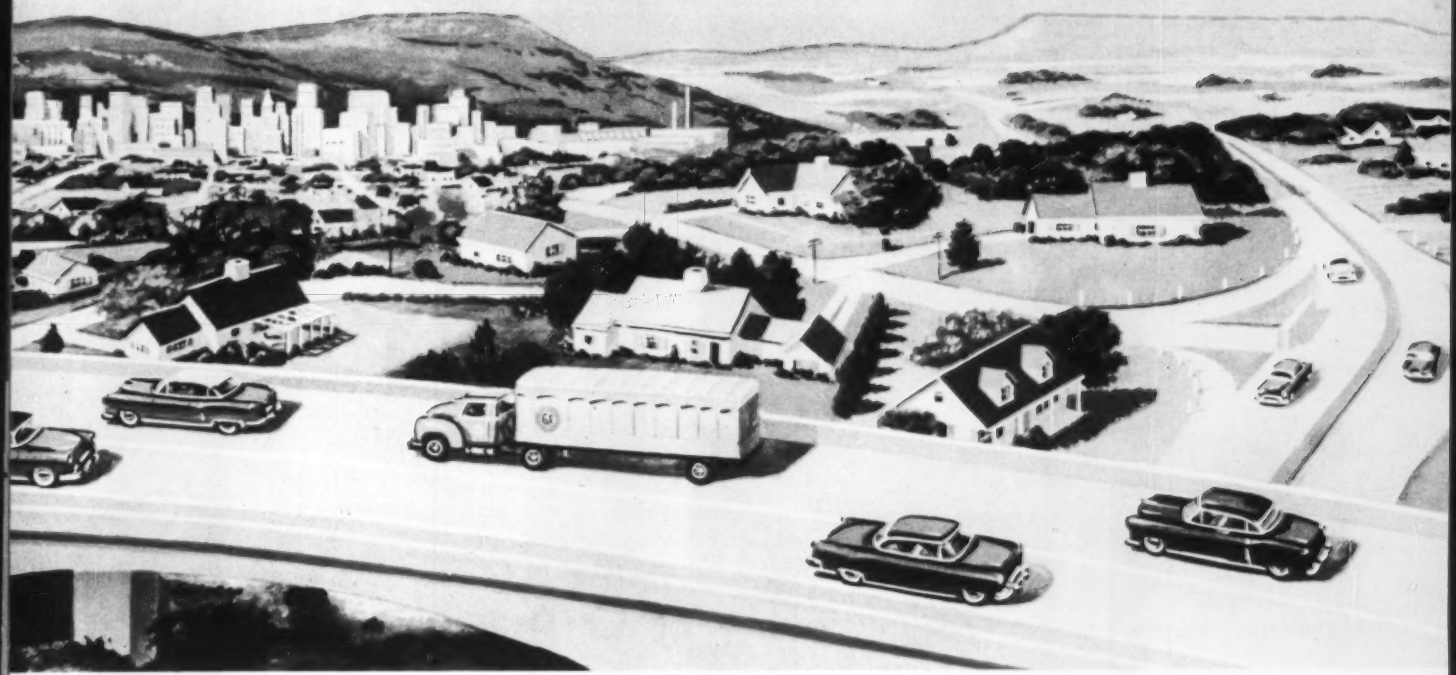
Mack Galbreath has resigned from the Federal Bureau of Public Roads because of ill health, after serving for 36 years as federal district highway engineer in Kentucky.

He joined the Federal Bureau of Public Roads in 1913—the year after Congress set up the first permanent program of federal-aid for highways and appropriated $500,000 for improvement of state roads over which mail was to be carried. The location survey for the road selected for improvement in Kentucky was made by Galbreath, who followed through on the project as assistant supervisor of construction for the next two years.

He then became a district engineer for the state of Kentucky but returned to the federal road agency in 1919. In the meantime, Congress had made an appropriation for a five-year highway program and had set up an organization within the Department of Agriculture to administer it. The first

(*Continued on page 53*)

35% INCREASE in CEMENT and AGGREGATE PRODUCTION NEEDED



Are You Preparing to Meet the Demand?

Current cement production in the United States runs about 265 million barrels per year. Carefully calculated estimates place required capacity for 1959 at 407 million barrels to supply highway and other construction growth. The increase in aggregate consumption will be equally great throughout this same period.

Yes, ahead of you is what could be most profitable years — profitable if your plant is ready to handle increased volume efficiently — profitable if your plant is geared to meet rigid specifications economically.

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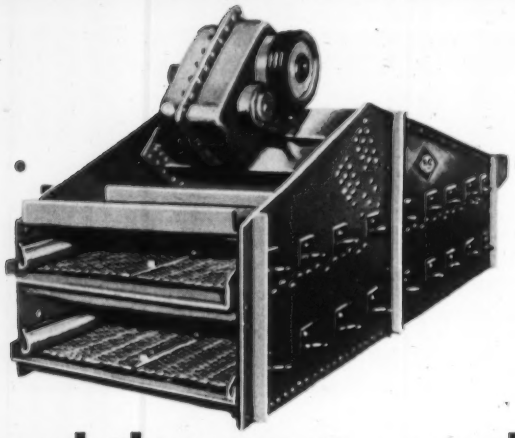

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In planning for profitable expansion, there are two all-important considerations:

1. Dollar per ton (or barrel) cost of expansion.
2. Volume per man-hour.

With these factors dictating the approach, expansion planning differs from plant to plant. In some operations, profitably meeting increased capacity requirements calls for complete replacement of outmoded equipment. In other plants, the answer lies in supplementing existing equipment and/or developing a more efficient flow. Considerations might also run toward reduced fuel utilization, power consumption, and maintenance. In the case of cement, it could also call for more grinding production or increased burning capacity. It could require better heat recovery or faster clinker cooling.

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With 108 years experience in producing hundreds of *different* types of processing machinery—with the knowledge gained in solving tens of thousands of varied application problems, Allis-Chalmers is an organization that can help you avoid many "pitfalls" in your expansion effort.

Allis-Chalmers, with a century of leadership and experience, builds all the basic machines used in producing aggregate and in making cement, as well as the motors and electric power equipment needed to drive them.

Gyratory Crushers — Most Allis-Chalmers gyratory crushers are supplied with hydraulic adjustment which provides precise product size control and compensation for wear — at the flick of a finger. A wide line of jaw crushers are also built by Allis-Chalmers.

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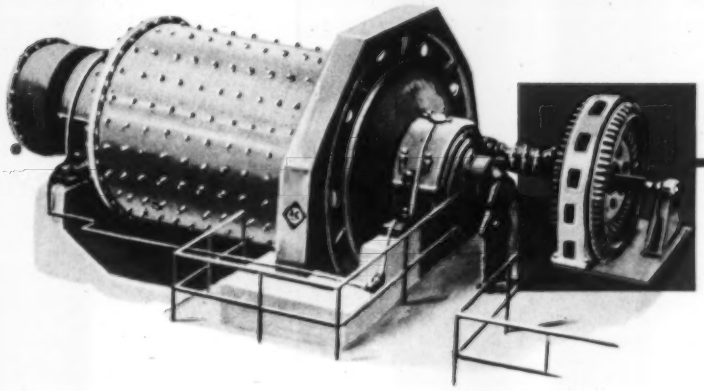
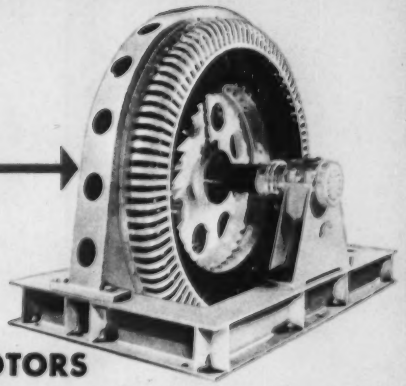
A-C ALLIS-CHALMERS

ALLIS-





MOTORS

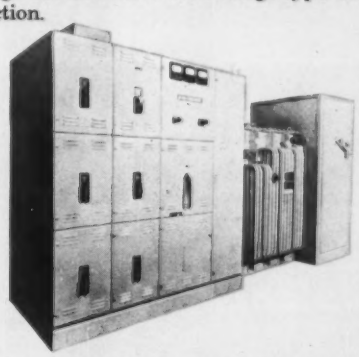
Illustrated is an Allis-Chalmers synchronous motor. Motors of this type are applicable to most constant speed drives. Widely used on grinding mills, Allis-Chalmers synchronous motors provide high efficiency and improve system power factor.

Allis-Chalmers builds a complete line of poly phase induction, synchronous and direct current motors. Mechanical modifications obtainable include drip-proof, splash-proof and totally-enclosed fan-cooled construction in vertical as well as horizontal types. Many ratings are available with flange-type construction.

and diversified line of

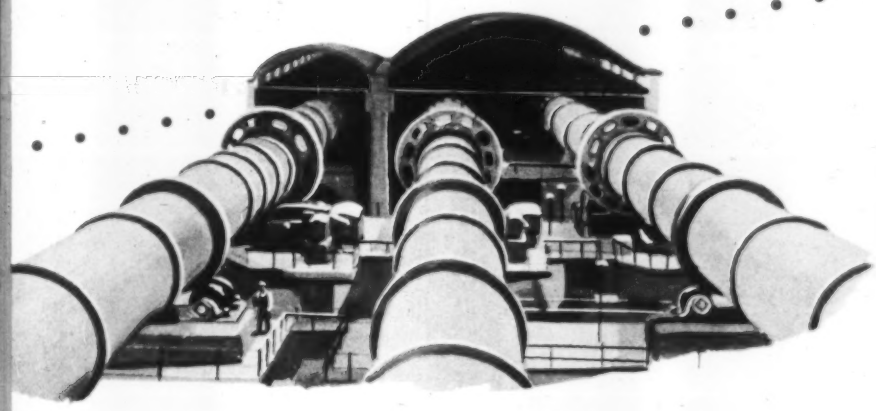
Equipment

cement industries



UNIT SUBSTATIONS

Available in combinations of switchgear and transformer elements to meet any requirement. With unit located near load centers, high voltages are brought in with a minimum of power loss and with complete safety. Because secondary runs of heavy cable are short, voltage drop is reduced.

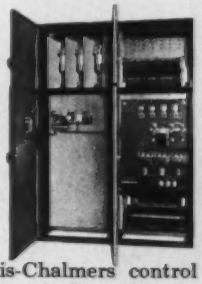


separation, wet or dry screening, rinsing and dewatering. The recently introduced general purpose Model AVS screen is the "talk" of the industry.

Grinding Mills — Allis-Chalmers manufactures all the proven mill designs including those for producing specification or manufactured sand.

Rotary Kilns — Allis-Chalmers all-welded rotary kilns are built in standard and special sizes for a wide variety of uses including cement manufacturing and the production of lightweight aggregates, lime, refractory materials, fertilizers, and chemicals.

CONTROL



The development of the control circuit of the starter shown is an example of Allis-Chalmers integration. Drawing on experience gained in applying hundreds of gyratory crushers, Allis-Chalmers control and crushing engineers worked out this circuit specifically to cut costly crusher downtime.

The Allis-Chalmers control line extends from small manual starters for fractional hp motors through starters applied in controlling motors up to 2500 hp. Built into every control is the type and degree of protection required to meet a specific need.

CHALMERS

TURN PAGE for help in meeting specifications in stone or sand

SPECIFICATION STONE

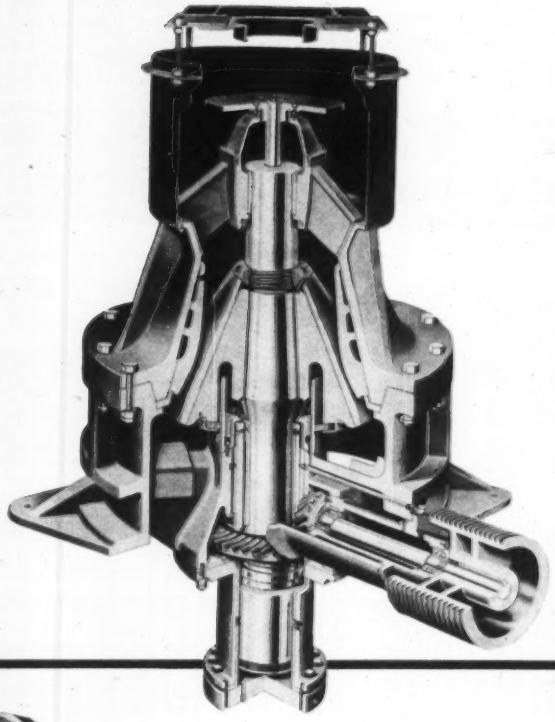
at the Flip of the Switch with the HYDROCONE Crusher

One man, one minute product control! In this truly modern crusher, *Hydroset* control provides a rapid and convenient means of raising and lowering the hydraulically supported crushing mantle. Adjustment to precise size is accomplished by the flip of a switch. Compensation for wear and fast emergency unloading are accomplished in the same easy manner.

Produces Cubical Product

Because of its small eccentric throw in relation to crusher setting, the *Hydrocone* crusher also helps you meet specification by producing a uniform, cubical product. With a smaller effective ratio of reduction during each crushing stroke, fines, slivers and flats are kept to a minimum.

Hydrocone and *Hydroset* are Allis-Chalmers trademarks.

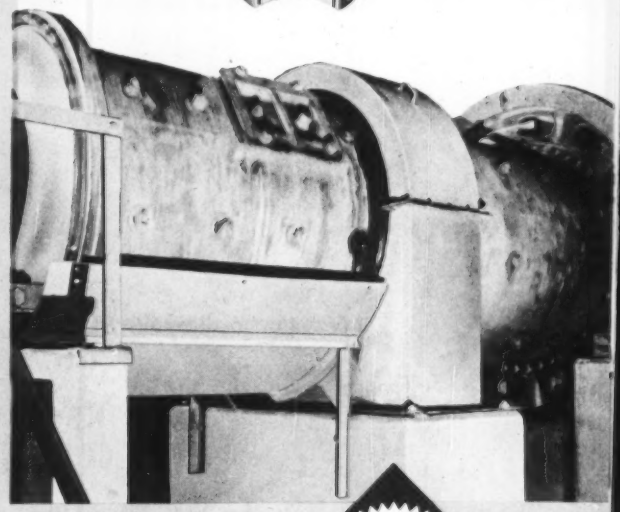


"Manufactured" SAND

from ALLIS-CHALMERS Rod Mills

An Allis-Chalmers rod mill converts unsalable material into specification sand. It prolongs productivity of natural reserves. It produces sand where natural sands are unavailable or unusable.

Processing specification sand or coarse aggregate from rock, and grinding aggregate or natural sand, are particularly abrasive and difficult jobs. That's why Allis-Chalmers rod mills are so well suited for the job. Basically, the A-C rod mill is a simple, rugged machine . . . a grinding mill that requires little attention, yet provides continuous, dependable performance.



ALLIS-CHALMERS

A-C ALLIS-CHALMERS

WRITE FOR LITERATURE

I would like bulletins on.....
(type of equipment)

Explanation of process or problem.....

.....

.....

Name.....

Title..... Company.....

Address.....

City..... Zone..... State.....

A-4818

WRITE FOR LITERATURE

ALLIS-CHALMERS
Industrial Equipment Division
Milwaukee 1, Wisconsin

federal-aid project under the new program was begun in Kentucky the year Galbreath returned to federal service and became the district highway engineer for Kentucky.

A native of Coffey, Mo., Galbreath graduated from the University of Missouri in 1912 with a degree in civil engineering, and spent a year with the Mississippi River Commission before beginning his highway career.

Men and Jobs Briefs . . .

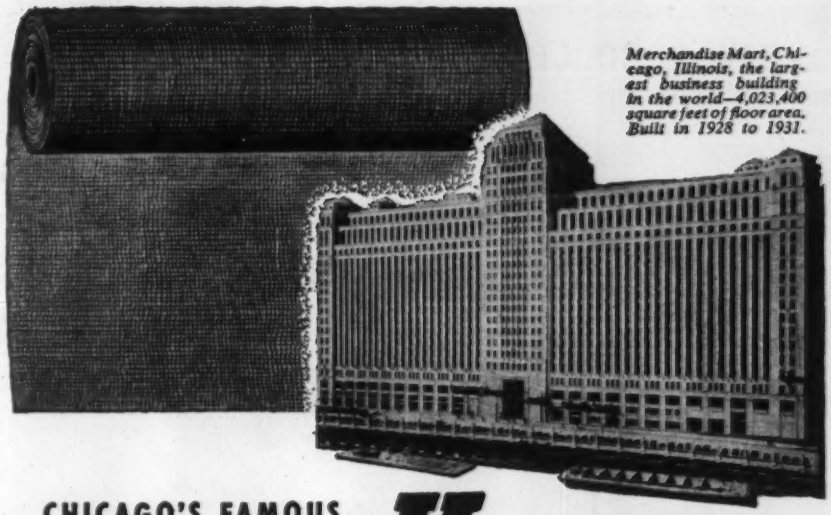
• **Careers**—The South Carolina Highway Department promotes **William K. Beckham** from maintenance engineer to assistant state highway engineer and names **Hugh Lee Sligh** maintenance engineer . . . **Gershon Kulin,** former engineering research assistant at MIT, joins the National Bureau of Standards where he will conduct experimental research in general fluid mechanics and hydraulics.

Donald C. Delvin leaves the Pan American Engineering Construction Co. of Honduras, an affiliate of the J. A. Jones Construction Co. of Charlotte, N. C., to become highway budget analyst for North Carolina.

• **Business**—Civil engineer **Roger D. Brown** is elected vice president and director of Laur and Mack Contracting Company, Inc., Niagara Falls, N. Y. . . . **E. H. Krieg,** Stone & Webster Engineering Corporation consulting engineer and specialist in the steam power field, is transferred from the company's Boston office to its New York office . . . **H. C. Byrd,** former president of the University of Maryland, joins Baltimore Contractors, Inc., Baltimore, Md.

Leopold Nadeau, former general secretary of the Corporation of Professional Engineers of Quebec, joins Racey, MacCallum and Associates, consulting and inspecting engineers in Montreal and Toronto . . . **H. R. Goeller, Inc.,** structural steel fabricators and erectors in Hillside, N. J., changes its name to Buie Steel Corporation.

R. M. Dorman is named public relation manager for Bechtel Corporation, reporting to John F. O'Connell, vice president of the Industrial Relations Division . . . **P. W. Kohlhaas** is elected a vice president of Patterson-Emerson-Comstock, Inc., Pittsburgh, Pa., engineering firm specializing in electrical installations, and establishes a company office in San Francisco.



Merchandise Mart, Chicago, Illinois, the largest business building in the world—4,023,400 square feet of floor area. Built in 1928 to 1931.

CHICAGO'S FAMOUS MERCHANDISE MART CALLED FOR **Karnak®**

WATERPROOFING PRODUCTS

Karnak fabric is packed in sturdy, corrugated cartons for protected shipping and storage. They keep the fabric in perfect condition until used . . . cut fabric loss.

Twenty-five years ago, the problem of protecting the foundation of the "Mart" from hydrostatic head was answered with *Karnak*. Even though the big Chicago River flows beside it, *this Karnak job holds secure.*

Why was *Karnak* chosen? Because it is the membrane system of waterproofing *that holds tight against any water condition.*

Karnak is an open mesh long-fibre cotton cloth that has been heavily impregnated with highly refined asphalt *so as to leave the mesh open.* It is layered, on the job, with alternate moppings of asphalt to *provide a tough, resilient, waterproof membrane.* The non-sticking fabric unrolls easily . . . to the very end. It "works" faster and with no waste . . . saves labor costs.

The *Karnak* Membrane System is best for roof patching, skylight flashing, window and door flashing, through-wall and cornice flashing, as well as waterproofing against a hydrostatic head in dams, swimming pools, viaducts and tunnels. Send coupon for complete information. Manufactured by Lewis Asphalt Engineering Corp., 30 Church Street, Dept. 212, New York 7, N. Y. © L.A.E. Corp.

OTHER KARNAK PRODUCTS

Asphalt Roof Coatings and Cements · Caulking Compounds · Asphalt Emulsions · Tile Cement · Asphalt Paint · Aluminum Roof Coating · Wood Block Mastic · Joint Filler

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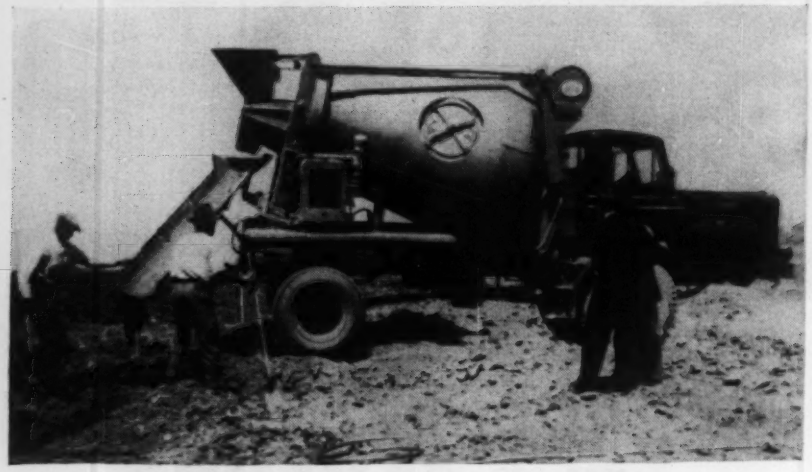


Carrier Splits Load Between Axles

A four-wheel drive ready-mixed concrete carrier has been designed to carry a 36,000-lb payload—18,000 on each axle. A unique feature of the design is that the entire engine is cantilevered forward of the front wheels providing access to the engine for service and repair work without the need to climb fenders.

The Oshkosh 50-50 carrier hauls up to 5 cu yd legally, depending on the mixer selected, with sufficient water for ready-mixed concrete operation. According to the manufacturer, lower maintenance costs are achieved because the Model 50-50's two driving axles have 20% fewer parts than one ordinary tandem unit. The carrier has a 144-in. wheel base and is equipped with Vickers power steering which acts directly with only one drag link. This feature reportedly permits the unit to make more payload trips per day, provides a shorter turning radius, and easier load spotting than tandem units.

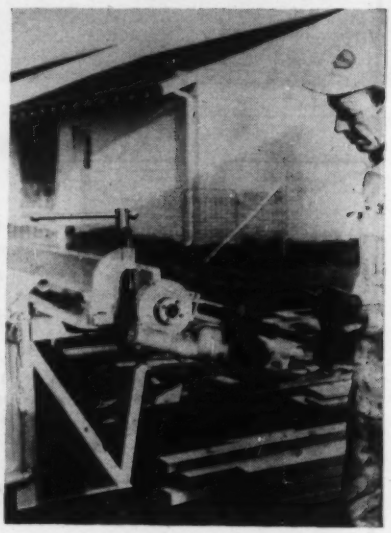
The design of the 50-50 not only permits convenient access to the Continental 141-hp engine, but the exposed power steering unit and the horizontally mounted differential units may be serviced without removing the mixer from the chassis.

14:00 x 20, 18-ply single tires are used on the front wheels, and the front axle is a double reduction, full floating type designed to carry 18,000 lbs. or 50% of the gross load. Oshkosh Motor Truck, Inc., 2300 Oregon St., Oshkosh, Wis.

Powered Threader Makes Short Work of Pipe Jobs

Quick and easy pipe threading on the job may now be possible through the use of a Lawco Junior portable power pipe threader. Adapters and a speed reducer make it possible to handle pipe from ¼-in. up to 10 in.

The threader weighs 20 lb, is 27 in. long and designed and constructed for one hand operation. When the threading dies are attached and the tool positioned, the press of a button operates the power unit and drives the cutting dies. It is equipped with a ¾-hp electric motor and a toggle switch to provide reversible power. The tool may be used also as an auger, for boring post holes, driving bolts and nuts, opening valves and as a hoist for weights up to 500 lb. Velocity Power Tool Co., 201 N. Braddock Ave., Pittsburgh, Pa.



DW20 and DW21 Get New Engine and Matched Scrapers

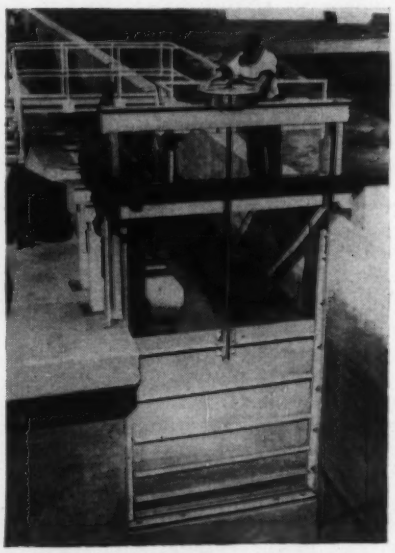
Two new additions to the Caterpillar rubber tired tractor line are the DW21 (Series C) and the DW20 (Series E), both featuring more horsepower and major design changes over the current models.

Each of the tractors is powered by a new turbo-charged diesel, rated at 300 hp at 1,800 rpm. Driven by the engine's exhaust, the turbocharger utilizes energy that otherwise would be lost.

Wide base tires with rock-type tread are standard equipment on the DW21 (Series C) and DW20 (Series E) tractors. These 29.50: 29 tires operate at lower pressures for greater flotation and wide lug traction.

The customer may have his choice

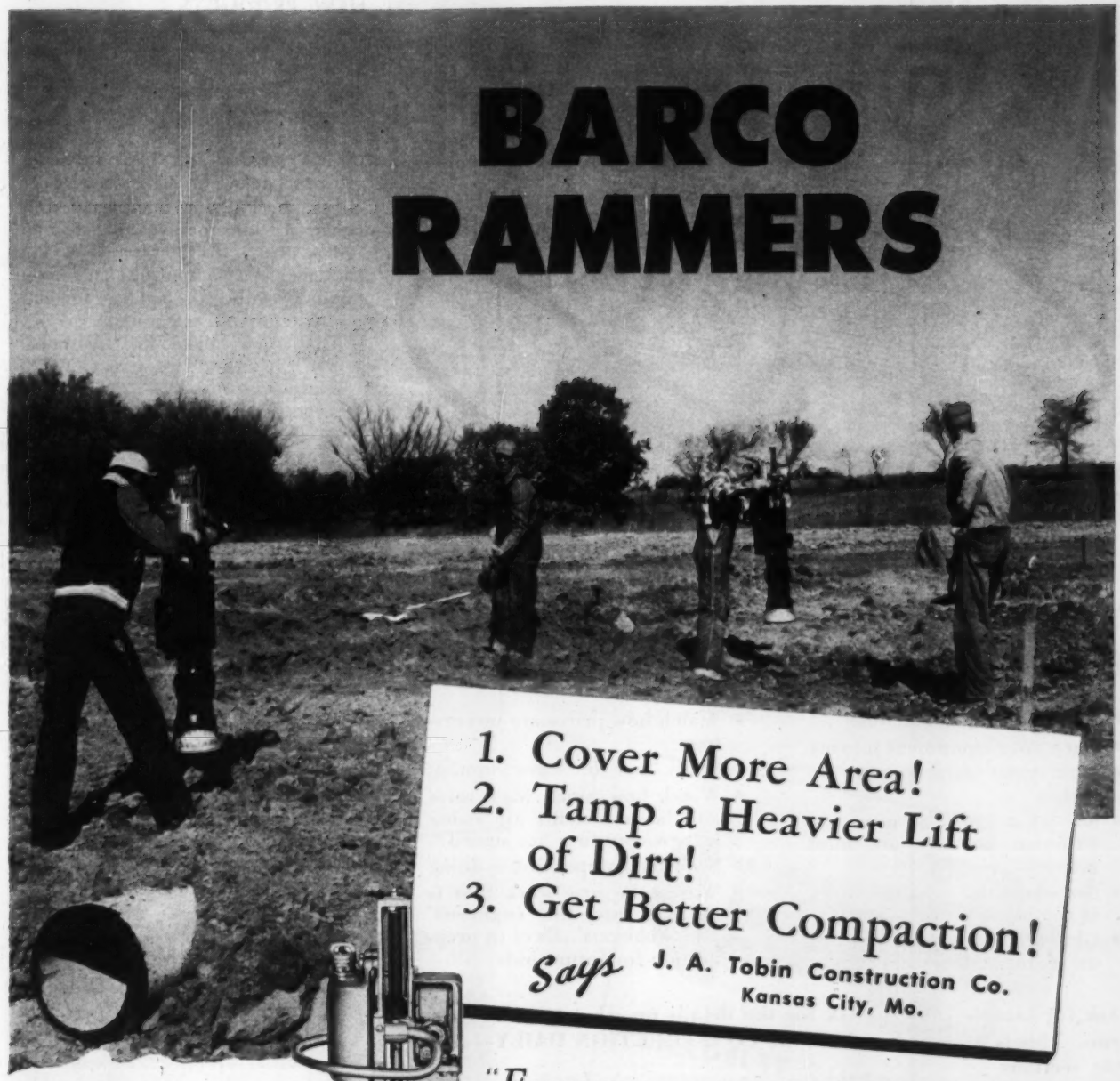
(Continued on page 56)



Aluminum Slide Gate

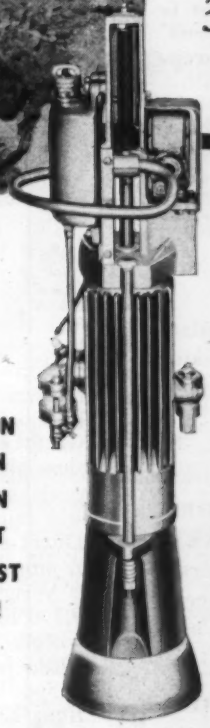
A slide gate made of sheet aluminum reinforced with extruded aluminum angles, reportedly can be used where economy as well as function can be served, for example, as a stop-gate in by-pass channels. According to the manufacturer, not only is the gate low in cost in comparison with other types, but also, only a simple frame is required for installation. The gate is controlled by a manually operated bench-stand hoist with control stem. In normal flow, it is corrosion resistant. The maker recommends the use of the gate when odd channel sizes are present in design, full channel flow is desirable, and where closure can be made under balanced conditions. Rodney Hunt Machine Co., Orange, Mass.

BARCO RAMMERS



1. Cover More Area!
2. Tamp a Heavier Lift of Dirt!
3. Get Better Compaction!

Says J. A. Tobin Construction Co.
Kansas City, Mo.



- SELF-CONTAINED
- PORTABLE
- ONE MAN OPERATION
- FASTER COMPACTION
- BETTER COMPACTION
- LOWER INITIAL COST
- LOW OPERATING COST
- EASY TO USE, SAFE!

"EVERYBODY seems to be turning to Barco Rammers; our company certainly is," states George Pennington, Warehouse Foreman, of J. A. Tobin Construction Co., Kansas City, Mo. *"The Barco machines cover more area, tamp a heavier lift of dirt, and get better compaction . . . Never heard a complaint on their operation in three years . . . They really do the work!"*

Two of the Tobin Company's Rammers are shown in the above picture working on a fill over a culvert on Highway 69 near Kansas City. Other compaction being handled is around water mains and near ends of bridges. One of the most important advantages offered by Barco Rammers is helping contractors get jobs finished on time. YOU CAN GET IMMEDIATE DELIVERY ON BARCO RAMMERS NOW — CALL OUR NEAREST DISTRIBUTOR TODAY OR WRITE.

For Soil Compaction Close to Walls, Culverts and Abutments — in Trenches, Ditches

BARCO *Manufacturing Co.*

514H Hough St., Barrington, Illinois

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The Construction Market Letter for Contractors Can help you

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of either direct electric starting or gasoline starting on the two new tractors. Speeds for the DW20 (Series E) range from a low of 2.8 to a high of 32.1 mph; on the DW21 (Series C) from a low of 2.3 to a high of 20.5 mph. Full-flow filters have been engineered into the hydraulic steering system to keep the fluid free of foreign particules. Brake controls have been improved with roto-chambers for better performance.

To better utilize the additional power built into the new DW20 (Series E) and the DW21 (Series C) Tractors, two new matching scraper units have been designed—the No. 456 Scraper for the DW20 (Series E) and the No. 470 Scraper for the DW21 (Series C). These scrapers feature wider and longer bowls that increase the capacity to 18 yd struck and 25 yd heaped.

A new high lift apron has been developed that reportedly gives faster, more positive material ejection under all conditions. Higher ground clearance also has been built into the scrapers.

The same wide base tires that appear on the new tractors are standard equipment on the scrapers. A larger pusher block protects the tires and is said to insure positive pusher contact with the scraper and reduce the possibility of damage to either the dozer or the scraper. CATERPILLAR TRACTOR CO., PEORIA 8, ILL.

A-C's Model D Motor Grader Equipped With 50-hp Diesel

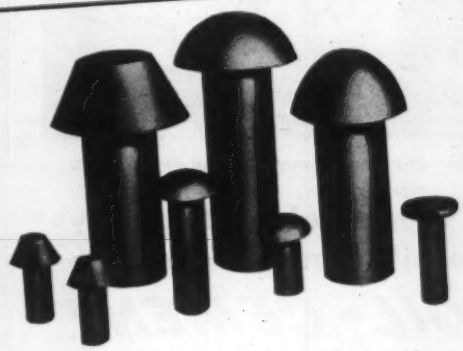
The Allis-Chalmers Model D diesel motor grader will be equipped with a new 6-cyl, valve-in-head diesel rated at 50 max. bhp at 1,624 rpm. The Model D will continue to be offered with gasoline engine also.

The new diesel has a $3\frac{7}{16}$-in. bore and $4\frac{1}{8}$-in. stroke, and 230 cu. in. piston displacement. Incorporated in this new engine are features such as replaceable wet-type cylinder liners; by-pass cooling system with high capacity water pump; pressure lubrication; aluminum alloy pistons; simple, easily serviced fuel injection system; and four filters to assure clean fuel. Direct electric starting on diesel fuel is provided by a 12-v starting system.

Weight of the Model D diesel is 9,350 lb. with 2,760 lb on the front wheels, and 6,590 lb. on the rear. Blade pressure is 4,900 lb.

Speeds with 7.50x20 tires range from 2.6 mph in first gear to 25.2 mph in fourth. ALLIS-CHALMERS MFG. CO., TRACTOR DIV., MILWAUKEE 1, WIS.

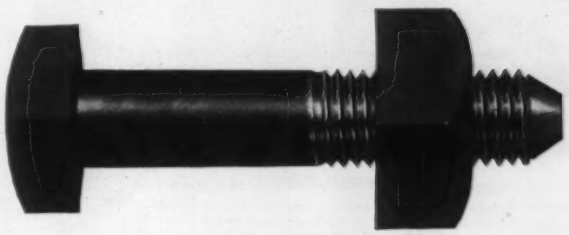
For the Big Construction Jobs



RIVETS (SMALL AND LARGE)

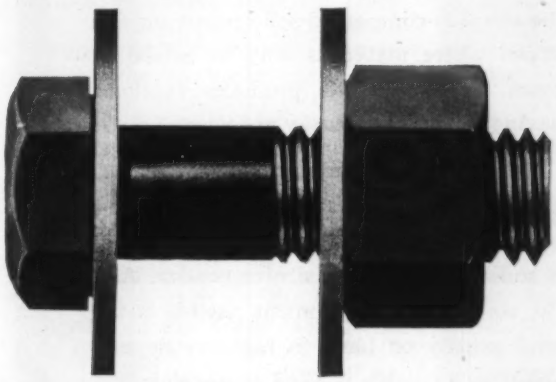
Bethlehem small rivets are furnished in diameters 7/16 in. and smaller, and in lengths 6 in. and shorter. They come with button, cone, countersunk, pan and flat heads.

Large rivets come in sizes from ½ in. to 1¾ in., and in lengths 2 in. and longer. Button, high-button, countersunk, round-top countersunk, cone and pan heads. Also swell neck.



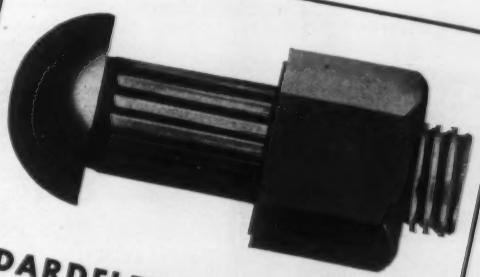
FITTING-UP BOLTS

Furnished in three types: 70,000 lb, low-carbon, untreated; BS-B8, medium-carbon, heat-treated; and BS-B9, medium-carbon, heat-treated. American Standard regular unfinished square heads, plain necks, semi-cone points, and American National coarse threads. Also 60 deg modified Acme Thread.



HIGH-STRENGTH BOLTS

Easy to install, by means of holding wrench and pneumatic impact wrench. Two hardened washers are used with each bolt, one under head, the other under hexagonal nut. The carbon-steel bolts are heat-treated by quenching and tempering to meet requirements of ASTM Specification A-325. Furnished in diameters from ½ in. to 1¼ in., and in varying lengths.



DARDELET RIVET-BOLTS

When driven, the oversize ribs on the shank deform, wedging themselves securely in hole. Bolt has self-locking threads which lock nut against vibration and shock, providing permanently tight joints. Furnished with button, countersunk, and special heads. Wide size range.

For additional information about Bethlehem construction fasteners, just get in touch with the nearest Bethlehem sales office.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

Bethlehem Bolts are Good Bolts

BETHLEHEM STEEL

In South Carolina soil-cement protects a bridge abutment.

Soil-cement paved highway berm and ditch in Texas.

Soil-cement stabilized bridge embankment and ditch in Tennessee.

Sides of highway cut in Texas paved with soil-cement.

Drainage ditch along Alabama highway lined with soil-cement.

Soil Erosion along Highways easily controlled with

SOIL-CEMENT

Paving highways at low cost with durable soil-cement is an old story in most states. Controlling ditch and backslope erosion with soil-cement is equally economical.

These photos demonstrate how soil-cement can be used for erosion control. They show two common methods of placement: (1) plastic soil-cement for narrow or steep slopes where materials must be mixed off the site; (2) compacted soil-cement for flat slopes where materials may be mixed in place. Either method produces excellent paving quickly and easily at low cost.

Soil-cement is economical for erosion control—as it is for all soil-cement projects—because about 85% of the material required is soil already on the site or nearby. And the construction equipment needed is the kind usually on hand in highway departments or available to local contractors.

Many soil-cement erosion control projects are in service throughout the country. For more information about low-cost control of erosion with soil-cement, write to address below, or to the nearest PCA district office.

PORTLAND CEMENT ASSOCIATION
Dept. A7d-17, 33 W. Grand Ave., Chicago 10, Ill.

A national organization to improve and extend the uses of portland cement and concrete . . . through scientific research and engineering field work

Belgian Congo Pushes Hydro Schemes; Italian Power Plans Get High Priority

The Belgian Congo is completing a vital new hydro power development and hoping to attract U. S. and Canadian capital for another and much more ambitious undertaking. And, on the European Continent, Italy has given power development a high priority in its 10-year industrial expansion plans.

The Belgian Congo government is well along in the construction of a major dam on the Inkisi River, a tributary of the Congo, near the town of Zongo. Plans already have been made for a second dam to be built further downstream.

In the past years, most of the electric power in the Belgian Congo has been developed by major mining companies for their own purposes, with the sale of whatever surplus power existed through local distribution concerns.

However, in recent years demand for power has grown considerably under several influences—industrial expansion; growth of a middle class native population which is beginning to demand electric household appliances; and development of electrically-operated public transport as exemplified by the electricification of the railroad in the Kolwezi section, and electrically-powered buses about ready to start service in Leopoldville.

Leopoldville for many years took its main power supply from another dam on the Inkisi at Sanga, but it has long since outrun this station's capacity.

The dam at Zongo, known locally as Zongo 1, will use the potential generated in the Zongo falls on the Inkisi. The falls, about 200 ft. high, pass during flood times about 18,000 cfs., and in the dry season about 190 cfs.

The dam is above the falls, and diverts water through a hill via a long tunnel to a powerhouse which eventually will contain 10,500 kw generators. Workmen are now installing the machinery for the power station, while finishing work continues on the dam. The dam itself is principally a diversion structure, and has a storage of only about 600,000 cubic meters of water.

• **Bigger project planned**—While Belgian government workers proceed with the Zongo development, the Belgian Colonial Minister produced plans for what he said would be the world's biggest power station—if U. S. and Canadian interests will finance it. This power station, to be developed at Inga, on the lower Congo River, would have a capacity of 20,000,000 kw.

According to sources in Leopoldville, the plan was originally put forward by the Canadian Aluminum Co., associated with the Union Carbide and Monsanto Chemical Companies. The manufacturing organizations want the power to serve a proposed aluminum plant, a carbide factory and various chemical works which will perhaps include a nitrogen plant. These industrial plants would be located on a tongue of land which is the Belgian Congo's corridor to the Atlantic, between Leopoldville and the Atlantic Ocean, and adjacent to French Equatorial Africa.

Total cost of this scheme has been estimated at between half a billion and 1¼ billion dollars.

Since the announcement of the vague outlines of the proposal by Colonial Minister Augueste Buisseret, an almost total news blackout has descended on the Inga project. The site, said to be virtually inaccessible, is being investigated by Swiss engineers. There is no spectacular water fall at the site, but a series of fast descending rapids through which the river makes an 18 mile loop. The ends of the loop are little more than a mile apart, but with a difference in elevation of about 300 ft.

• **Italian plans**—An Italian 10-year plan for industrial expansion earmarks the largest investments for electric power.

Government experts say that under their plans the output potential of plants to be operating in 1964 will be 66-billion kwh per year, an increase of 33.4-billion kwh over the supply available at the end of 1954. The power program will include construction of reserve thermal plants to supplement hydroelectric projects.

A second plan announced from Italy is that of the Lardarello Co., which has come to world notice by using subterranean steam for generating electric current. At a recent meeting of the directors of Lardarello, a plan was proposed for further development of underground steam sources involving expenditure of $10 million by 1956. The program calls for erection of three new power stations at Serrazzano, Sasso and Moterotondo, plus other facilities.

• **Spanish project**—Hydroelectria Espanola of Spain announced it had received authorization from the Export-Import Bank of Washington to spend $8,500,000 in the U. S. for purchase of two 62,500 kw and one 125,000 kw generators to be installed in its new Escombreras plant now under construction near Cartagena.

Britain Sets Up Expressway Program

Amid a deluge of criticism, on the ground that the program was not nearly large enough, Britain's Ministry of Transport has announced plans for construction of 340 miles of expressways to connect London with a number of major cities.

According to J. A. Boyd-Carpenter, Minister of Transport, the government estimates cost of the projects at roughly $750,000 per mile, including land. Major interchanges will cost between $120,000 and $270,000 each.

The expressways generally will be patterned after those built in the United States and in Germany in recent years, with two or three lanes of paving provided in either direction, separated by median strips. Access will be controlled at all points.

Initial construction which the government hopes to get under way within the next four years, will center on what is to be called the London-Yorkshire motorway. This will provide a link between London and the important industrial city of Birmingham.

Although no final decision has been reached, the expressways apparently are to be free, with the exception of possible tolls at certain bridges to be built on the route.

Sharpest criticism of the plan came from the Roads Campaign Council, an organization of manufacturers and highway users, which complained that the program was far too small to meet Britain's actual need for roads, and pointed out that an 800-mi road network first announced in 1946 had yet to be built. British newspapers also joined in criticizing the plan as not sufficiently ambitious.

(*International continued on page 60*)

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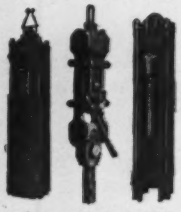

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World's Tallest Tower to Be Of Prefabricated Concrete

Report from Brussels indicate that Belgium is planning to build the highest tower in the world as a principal attraction for the planned Brussels World's Fair in 1958.

The proposed structure would be about 400 ft higher than New York's Empire State Building, and more than twice the height of the Eiffel Tower in Paris.

Approved in principle by the Belgian government, the plan provides for a 1,639-ft skyscraper, carrying a 442-ft television mast to bring the total height to 2,081 ft.

Estimated cost is $9.8 million, and the structure would be built of prefabricated concrete, standing on pile foundations.

The late Gustave Magnel (ENR July 14, p. 22) was the architect.

The structure would provide a total of 80 floors of offices, radio and television studios and exhibition halls.

Plans include use of concrete blocks, 19 ft long, 19 in. high and 11 in. thick. Announcement has not been made as to whether or not the blocks will be built of prestressed members.

Inter-American Road Sector Completed in Costa Rica

Central America celebrated an important transportation milestone recently, when a ten-mile sector of the Inter-American Highway, leading from the Costa Rican town of La Cruz to the Nicaraguan border was opened.

For the first time in history, it is now possible to drive on an all-weather highway from Guatemala City south to San Jose, Costa Rica, and visit enroute the capital cities of San Salvador, El Salvador; Tegucigalpa, Honduras; and Managua, Nicaragua.

Until now Costa Rica was virtually isolated from the rest of Central America as far as surface transportation was concerned. Only the old Spanish Royal Road connected Costa Rica with Nicaragua, and this road was really a trail, impassable during the six months' rainy season and used only by the most adventurous type of traveler at any other time.

As soon as the new highway was officially opened, bus service between Managua and San Jose was inaugurated and plans were made for through commercial truck traffic.

Completion of this sector leaves only two blocks to the fulfillment of the dream of a highway that extends from the Texas border through Central America to the Canal Zone. One of those blocks is a 150-mi sector between Icidro in southern Costa Rica and El Volcan in northern Panama; the other is a 30-mi stretch from Huehuetenango, Guatamala, to the Mexican border town of Ocotal. Work on part of this last section has already started.

Cuban Canal Proposal Encounters New Challenge

Legislation that would authorize construction of the long-debated $400-million canal across Cuba is having rough sailing in the Cuban legislature.

Latest squall to churn up the choppy seas for the project is a suit by 28 private citizens challenging the government's right to permit construction of the canal.

Constitutionality of legislation authorizing the canal already had been challenged in the Senate.

Ever since the government first launched the proposal for the construction of a canal it has been the subject of controversy and criticism. Proponents for the 50-mi waterway, which would cut arcoss Cuba from Cardenas Bay to Cochinos Bay, claim it would reduce trips of coast-wise ships by 400 to 500 sea miles; it would provide four years of employment for thousands of workers, and open up other labor markets in construction of facilities along the canal. More importantly it is claimed the canal would provide adequate facilities for bulk shipment of sugar that would save growers $40 million a year now spent on sugar bags in handling of the commodity.

The canal would be about 50 mi long, 132 ft wide, and 50 ft deep, and would contain no locks.

Tunnel Through Apartment Will Widen Montreal Street

Desperately seeking means of widening downtown business streets, the Quebec Municipal Commission has approved construction of a new traffic artery that will cut through the ground floor of a 10-story apartment building in downtown Montreal.

Approved by the Montreal City Council more than a year ago, the project has been under study by provincial authorities since that time.

The project involves the extension of Burnside St., which parallels overcrowded St. Catherine St., main east-west traffic artery of the city, a few hunderd yards to the north. Burnside St. would be extended for a distance

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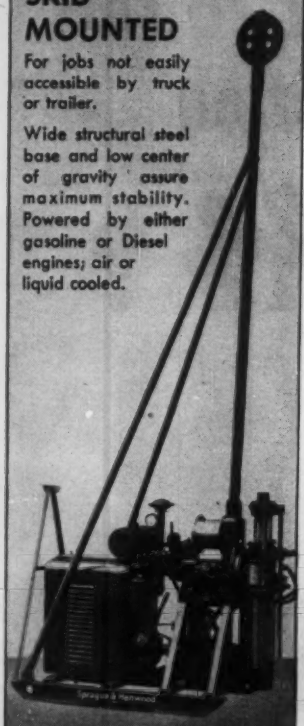

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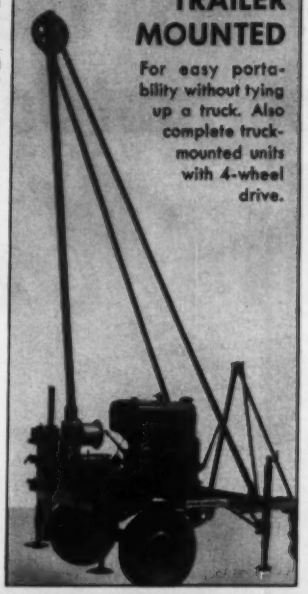

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of about half a mile from Stanley St. to Guy St.

By far the most expensive piece of property the city will have to acquire is the Drummond Court Apartments on Stanley St., at the very beginning of the next extension. Municipal officials plan to buy this building, at a cost of about $2 million, then build a tunnel through its ground floor to provide a one-way roadway. The other half of the roadway will be built alongside the existing building. Once the tunnel has been constructed, the city will resell the structure, but reserve right of way on the tunnel.

The tunnel will provide an 18-ft clearance for an east-west roadway 28 ft wide, plus a sidewalk.

International Briefs . . .

• **Training Funds**—The Foreign Operations Administration will provide $100,000 to train Paraguavans in the use and maintenance of highway construction equipment. The program in connection with 50-mile road through the rich agricultural Chaco area of western Paraguay.

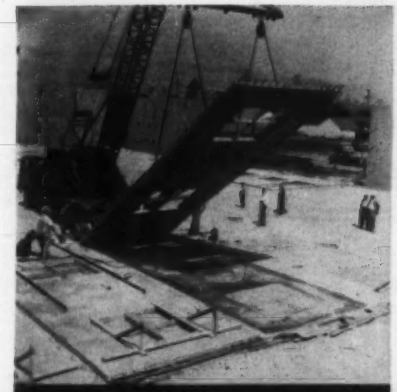
• **Bolivia Gets Money**—Bolivia will receive funds totaling $903,000 through the Foreign Operations Administration to provide technical assistance in developing roadbuilding services.

• **Luxury Hotel**—The Puerto Rico Industrial Development Co. and financier Lawrence S. Rockefeller have signed a contract for construction of a luxury resort hotel at Dorado, Puerto Rico, to cost an estimated $2 million.

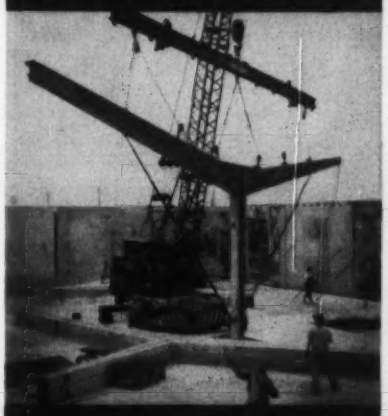
• **Caracas Apartments**—Construction should start this month on fourteen 15-story apartment houses, and seventeen 4-story structures in Caracas at a cost of about $15 million. The Banco Obrero will finance the work.

• **Housing for Puerto Rico**—The Federal Housing and Home Finance Agency has reported approval of construction of 5,004 low-rent dwelling units by the Puerto Rico Housing Authority, to cost about $39 million. This program is to accelerate a slum clearance program for the Island. Twenty-seven public housing projects are built and six others planned.

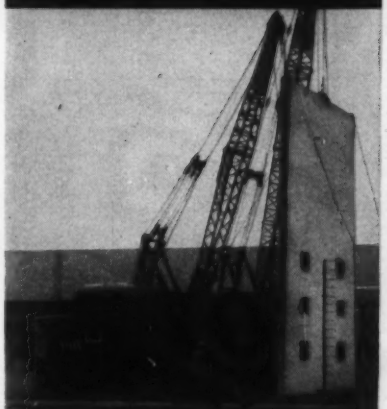
• **School Needs**—Canada's Ontario province will have to build more than 7,300 new schools and additions to existing schools within the next two years to take care of some 1,200,000 pupils, according to Dr. Cecil Cannon, Deputy Minister of Education.



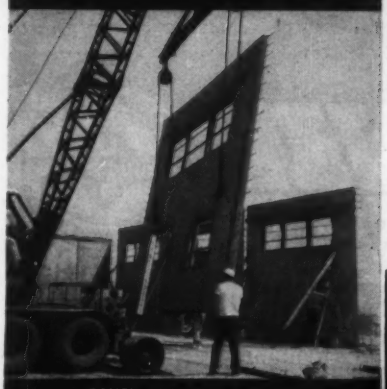
PRECAST PANEL 32' high, 18½' wide with two large window areas



TRUSS has 60' span at top



114,000 LB. SLAB being positioned



PANEL with door and two window areas

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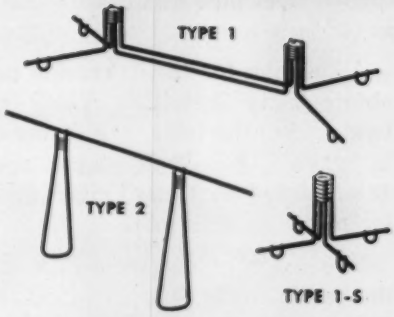

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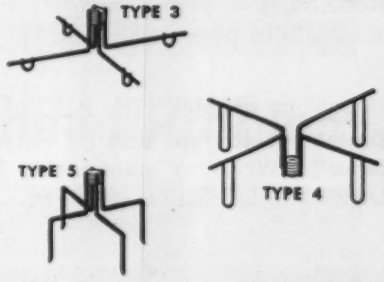
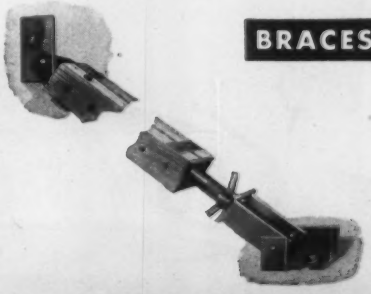


BRACES



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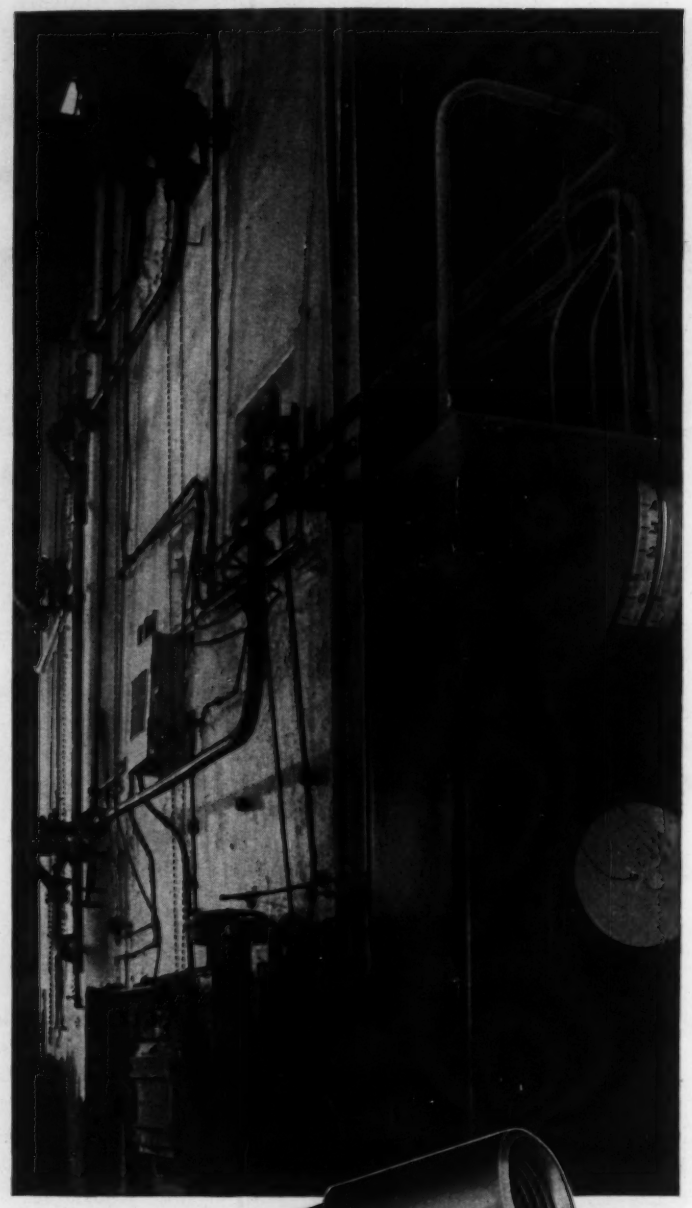

The pipe shown in the photograph of this large boiler carries steam for the "soot" and "fly ash" blower system in an Ohio electric plant. The service is so severe that regular carbon steel pipe had to be replaced as often as 60 days.

A solution for this corrosion problem was obtained by installing Yoloy pipe. Now, twelve months later, the Yoloy pipe is still in service—hasn't developed a single leak. It has lasted six times longer, and looks good for many months more.

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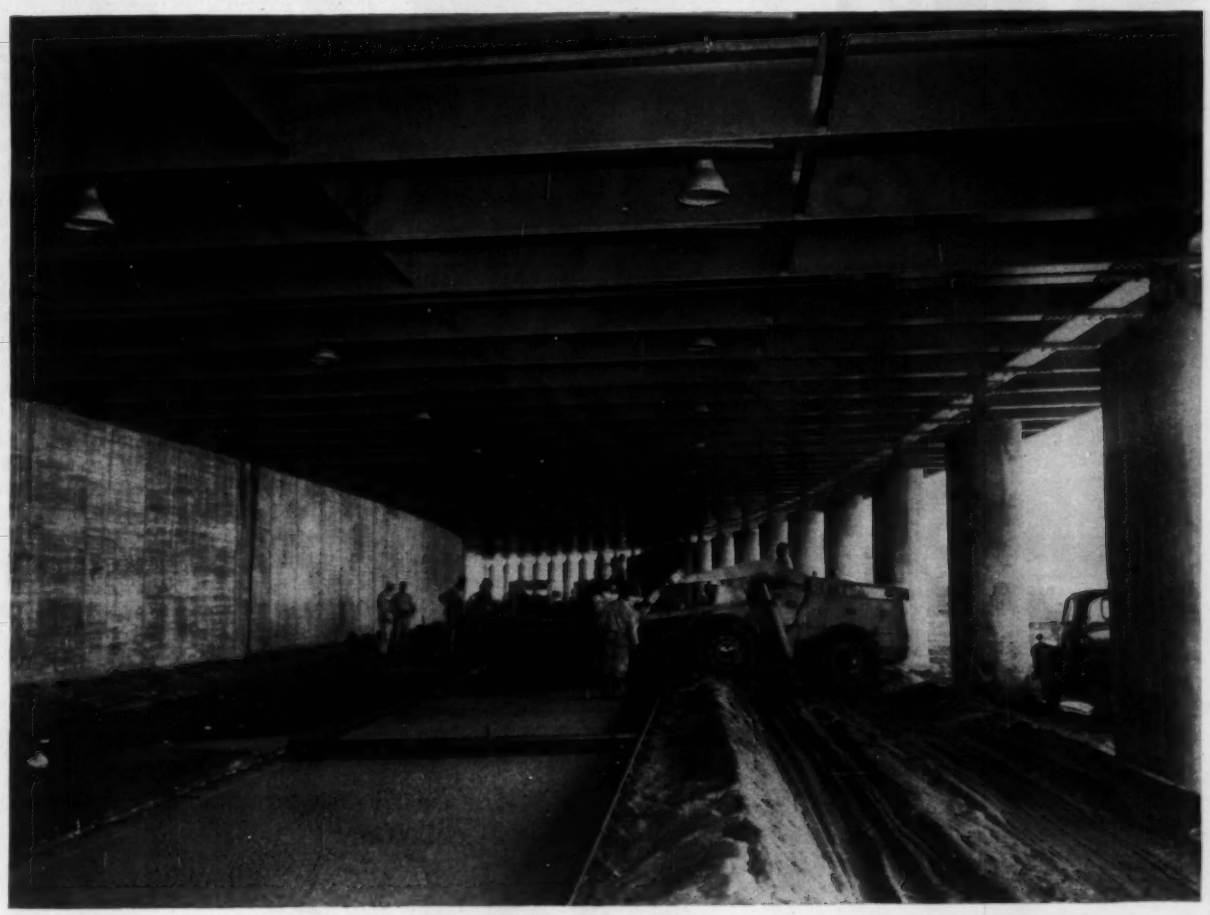

Tractor Shovels Solve Low Overhead Problem

Using two tractor shovels as concrete buggies was the solution Slattery Rock Corporation, Bronx, N. Y., devised for the tricky problem of pouring under a viaduct with underclearance too low to allow use of paving machines.

Slattery has a paving contract for a portion of New York City's six-lane Major Deegan Expressway, which will connect with the southern end of the New York State Thruway.

Paving of the first lane began by stationing the pavers in the second (unpaved) lane and moving them parallel to the work. Progress was uninterrupted until crews reached a viaduct which stretched for 800 ft over four of the six 12-ft lanes. Clearance under the viaduct was 14 ft, which proved to be too low to permit raising of the pavers' skips to feed batches into the mixing drum.

(*Continued on page 66*)

TRACTOR-SHOVEL picks up concrete from paving mixer located on the outside lane.

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Nevertheless, work had to continue without delay because of a rigid time schedule.

Use of ready mix trucks was impractical too because the lanes were laid on a sand fill which made a 3-ft difference between ground level and pouring elevation. Side slopes of the fill would prevent trucks from getting close enough to pour. Furthermore, the numerous supporting columns present restricted movement between lanes.

Four-wheel drive tractor shovels provided the answer. The paving mixers were moved to the fifth lane, not covered by the viaduct, and mixed concrete was discharged directly into the tractor shovels' buckets, filling them slightly less than the 1¾-yd capacity to avoid spillage while traveling over rough ground. Shuttling back and forth between the pavers and the four overhung lanes, the tractor shovels maneuvered handily between columns. Equipped with automatic shift, the machines pushed directly up to the edge of forms before making a pour.

From 200 to 250 passes of the tractor shovels were made to complete the pour for each 800-ft lane in about four hours.

One advantage of this method was that all four lanes could be poured immediately. Under normal procedure, according to John Saunders, job superintendent, the paver would move along a paved lane while pouring the next lane. But 15 to 20 days are required for a freshly poured lane to set up sufficiently to support the paver. This delay was eliminated by using the tractor shovels, since by making their pours at the edge of the form, they didn't have to travel on newly-concreted areas.

Two teams of tractor shovels and pavers were used—the first team mixing and pouring regular concrete, with the second following a few feet behind pouring the glare-reducing concrete containing emulsified carbon black.

Further along on the job the tractor shovels were used in spots where utilities and other obstructions hampered use of the paver.

Photo Courtesy of Shannon Building Corp.

The Mountain Goes to Mahomet

A rolling building is being used to shelter reinforcement rods which will be used in Louisiana's Lake Pontchartrain Bridge. When the shipments of steel rods are unloaded from barges, the rolling shed is moved over the storage area. The material does not have to be handled again until transferred to the forms. The heavily trussed structure moves on rails and is anchored by means of dead-men and cables to withstand hurricane windloads. The building's measurements are: 40 ft wide, 80 ft long and 10 ft overhead clearance.

OBITUARIES

Charles L. Shedd, 74, a retired structural engineer, died in Arlington, Mass., June 19. He had been associated with Stone & Webster Engineering Corp. in Boston.

Sheldon Cary, 84, who served as president of the Browning Crane & Shovel Co. of Cleveland for 38 years before his retirement in 1952, died July 14 at his home in Cleveland Heights. Mr. Cary headed the firm since it was organized in 1914 as a successor to the Browning Engineering Co., which he joined in 1907. The company was a pioneer in labor management and was among the first to institute profit-sharing for employes.

Everitt A. Whitney, 86, a pioneer pile driving contractor who started with horse drivers and drop hammers in Wisconsin in 1889, died July 8 in Sioux City, Iowa, headquarters of E. A. Whitney & Son, which he founded in 1919. His firm, which established an office in Kansas City in 1920 and in Houston, Texas, in 1940, has done some of the largest pile driving projects in the country. Among them are 134 grain elevator foundations, the piling for Fort Peck Dam and for nine Mississippi River locks and dams and foundations for the Huey Long Bridge at New Orleans. Mr. Whitney retired from business in 1942.

James A. Ordway, 81, construction superintendent with the North Carolina Highway Department from 1921 to 1937, died July 14 at Franklin, N. C. He was in charge of construction of many miles of primary road in western North Carolina.

Marshall B. Palmer, who served on the city engineer's staff in Syracuse, N. Y. from 1907 until his retirement in 1940, died in that city July 13. A civil engineering graduate of Cornell University, he worked on the widening and deepening of the old Erie Canal.

Edward Jenkinson, 70, for 17 years secretary-manager of the El Dorado Irrigation District in Placerville, Calif., died July 9. He was a principal figure in promoting development of the Bureau of Reclamation's Sly Park Project, which this year went into operation to serve a large portion of El Dorado County with water.

Ernest Howell, 71, retired civil engineer of the A. F. Wendling Co. of Massillon, Ohio, died July 7.

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Frank Rossi, Gardiner, Me. LB $565,956. b. conc. 6.005 mi. F.A. Proj. No. F014-1 (4) "14" Naples and Bridgton; LB $358,654. bit. grav. 5.314 mi. F.A. Secondary Proj. S 0273 (1) "23" Dexter-Sangerville. Bids July 13. CD 7/7.

NEW HAMPSHIRE—State Dpt. P. Wks. & Hys., Concord,
Frank Palazzi & Sons, Inc., 2321 Hartford Ave., Johnston, R. I., CA $666,022, est. $650,000. highway and bridge work, Everett Turnpike, Hooksett, LS-186M (1). Bids June 30. CD 7/6, under LB.

MASSACHUSETTS — Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Daniel D'Onfro's Sons, 712 Main St., Leominster, Mass. LB $107,624, est. $123,000. hy. and bridge work Main St., Lancaster. Bids July 12. CD 6/29.

▲ MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Warwick, R. I. CA $1,567,221, est. $1,500,000. hy. and bridge constr., F 328 (5), Dennis, Harwich and Brewster. CD 5/13.

▲ MASSACHUSETTS — Massachusetts Turnpike Auth., 80 Boylston St., Boston,
Bayer & Mingolla Constr. Co., Inc., 550 Park Ave., Worcester, Mass. CA $3,742,475, est. $3,700,000. hy. and bridge constr., Contr. 51-193, Chicopee and Ludlow. CD 6/20, under LB.

BUILDINGS—LB & CA

Wadhams & May Co., 15 Lewis St., Hartford, Conn., CA $642,838, est. $600,000. HIGH SCHOOL addn., Hubbard St., GLASTONBURY, CONN. Town, Charles A. Bader, chn. Bd. Educ., Glastonbury, Conn. CD 6/27, under LB.

▲ A. F. Peaslee, Inc., 15 Lewis St., Hartford, Conn., LB $1,391,421, HOSPITAL addn., remodeling, Spencer St., WINSTED, CONN. Litchfield County Hospital, Spencer St., Winsted, Conn. Bids July 8. CD 6/29.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

N. Y., Buffalo—GROUNDS IMPRVS.—BA 8/4—Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, imprv. grounds, Bldg. No. 7, Roswell Park Memorial Institute. Plans deposit $10.

Del., Milford—BA 8/9—Town, sewage force main. $750,000. Gilbert Assoc., Inc., 607 Washington St., Reading, Pa., engr. CD 6/10.

† New Jersey—AAA FACILITIES—BA About 8/30—U. S. Eng., 111 E. 16 St., New York 3, N. Y., AAA facilities, Ramsey. $500,000-$1,000,000. Leonard W. Wegman, Grand Central Terminal Bldg., New York 17, N. Y., archt. CD 7/14.

▲† New York—AAA FACILITIES—BA About 8/30—U. S. Eng., 111 E. 16 St., New York, Zone 3, AAA facilities, Amityville, $500,000-$1,000,000, Alexander D. Crossett, 27 William St., New York, archt.; housing at AAA facilities, Grand Island, $100,000, William S. Lozier, 10 Gibbs St., Rochester, archt.; AAA facilities, Orchard Park $1,000,000-$3,000,000, Brown, Guenther & Booss, 1860 Broadway, New York, Zone 23, archts.; AAA facilities, Spring Valley, $500,000-$1,000,000, Raymond & Rado, 101 Park Ave., New York, Zone 17, archts.; AAA facilities, Lido Beach, $500,000-$1,000,000; AAA facilities, Orangeburg, $500,000-$1,000,000, Leonard S. Wegman, Grand Central Terminal, New York, Zone 17, archt. for both jobs. CD 2/18.

† New Jersey—AAA FACILITIES—BA About 9/8—U. S. Eng., 111 E. 16 St., New York 3, N. Y. AAA facilities, Morristown, $500,000-$1,000,000. Raymond & Rado, 101 Park Ave., New York 17, N. Y., archts. CD 6/14.

BUILDINGS—BA

Md., Garrett Park—SCHOOL—BA 8/15—Sisters of Holy Cross, Eastern Ave. and Bunker Hill Rd. N. E., Wash., D. C., 2 story, brick, St. Mary's Preparatory School. $750,000. Plans deposit $100. Murphy & Locraft, 1518 P St. N. W., Wash., D. C. CD 2/18.

▲ N. Y., Long Island City—SCHOOL—BA 8/16—Bd. Educ., City of New York, Bureau Constr., 42-15 Crescent St., Zone 1, Aviation Trades High School, Queens Blvd. 47 Ave., 35 and 36 Sts., general constr. est. $3,551,000; plumbing and drainage est. $318,000; heating and ventilating est. $655,000; electrical and lighting fixtures est. $802,000; elevator and escalators est. $440,000. Plans deposit $45, $18, $17, $24 and $5 respectively. CD 4/2/54.

HEAVY CONSTRUCTION—LB & CA

▲ NEW YORK—Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany,
Poirer & McLane Corp., 33 W. 42 St., New York 36, N. Y. CA $5,106,936, est. $6,614,000. elimination of New York Central and Lehigh Valley R.R. with various streets and Erie R.R. in city of Batavia 2.33, 4.75, R.R. rel. mi., PSC 5396, 5936, 6500, 7685-7688, Genesee Co. CD 6/1, under LB.

▲ Westinghouse Electric Corp., 40 Wall St., New York 5, N. Y. LB $1,929,818. (4 bidders) Contr. P-141 60,000 kv turbine generator for 74 Street Power House, NEW YORK. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids July 8. CD 6/6.

† Denlin Constr. Corp., 210 E. 40 St., New York, N. Y. CA $583,640. wind tunnel modernization, Cornell Aeronautical Laboratory, BUFFALO, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids June 28. CD 5/19.

† U. S. Eng., 111 E. 16 St., New York 3, N. Y. cancelled bids to have been opened on or about Aug. 2, 3 ferry slips, Governors Island, ENG-30-075-56-2, FORT JAY, N. Y. Will re-advertise. CD 7/12.

† Broadman Electric Constr. Co., Inc., Rte 9W, Stoney Point, N. Y. CA $138,513. runway and taxiway lighting, Stewart Air Force Base, NEWBURGH, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y.

† Paul M. Sterling, 114 Liberty St., New York, N. Y. CA $630,198. rehab. existing facilities, Part II, Plattsburgh Air Force Base, PLATTSBURGH, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids May 24. CD 5/10.

▲ Terminal Constr. Corp., P. O. Box 175, State Hy. 17 Woodridge, N. J. CA, $973,406, general construction Contract A, garbage and refuse incinerator, JERSEY CITY, N. J. Jersey City Incinerator Auth., Assembly Chamber of City Hall, Jersey City, N. J. Grand total $2,186,101. Bids Apr. 22, CD 3/11;
Morse Boulger Constr. Co., 80 5 Ave., New York 11, N. Y., CA, $854,952, Contract B, incinerator and appurtenances, (Jersey City, N. J.);
W. W. Kellogg Co., 75 Malden Lane, New York 38, N. Y. CA, $98,452, Contract C, chimney and appurtenances, (Jersey City, N. J.);
Lafayette Iron Works, Inc., 649 Grand St., Jersey City, N. J., CA, $138,880, Contract D, structural steel and iron, (Jersey City, N. J.);
August Arace & Sons, Inc., 642 Third Ave., Elizabeth, N. J., CA, $120,411, Contract F, heating, ventilating and air conditioning, (Jersey City, N. J.).

† Eberle & White, 249 S. 24 St., Phila., Pa. LB $141,726. repairs, replacements, Bldg. 83, Naval Shipyard. NOY 89876, Spec. 48559, PHILA. PA. Dpt. Navy, Navy Base, Phila., Pa.

† Piracci Constr. Co., 2552 Woodbrook Ave., Baltimore 17, Md. CA $606,456. supersonic wind tunnel addn., ENG-18-020-55-63, ABERDEEN PROVING GROUND, MD. U. S. Eng., P. O. Box 1715, Baltimore 3, Md. (Correction—contractor). CD 7/6, under CA.

BUILDINGS—LB & CA

▲ Caristo Constr. Corp., 26 Court St., Brooklyn 2, N. Y. LB $1,257,000. (9 bidders) general contract P. S. 272, Seaview Ave., and E. 102 St., BROOKLYN, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids July 13. CD 6/21.

▲ Caristo Constr. Corp., 26 Court St., Brooklyn 2, N. Y. LB $2,137,000. (9 bidders) general contract JUNIOR HIGH SCHOOL 62, East 7th St. and Cortelyou Rd., BROOKLYN, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids July 8. CD 6/8.

Nostrand Building Corp., 3036 Ave. U., Brooklyn 29, N. Y. Owner Builds. $780,000. 6 story APARTMENT, 3165-3199 Nostrand Ave., BROOKLYN, N. Y. CD 5/12.

▲ Shore Gardens, Inc., 26 Court St., Brooklyn 2, N. Y. Owner Builds. $1,000,000. 6 story APARTMENTS, 2721-61 Ocean Parkway, BROOKLYN, N. Y. CD 5/25.

▲ William L. Crow Constr. Co., 101 Park Ave., New York 17, N. Y. CA Est. $4,000,000. 3 story, bsmnt., 180x202 ft. BANK, and 115x20 ft. adjacent parking lot, bounded by Delaware Ave., West Huron St. and South Elmwood, BUFFALO, N. Y. Federal Reserve Bank of New York, 33 Liberty St., New York, N. Y. CD 12/30.

I. & O. A. Slutsky, Hunter, N. Y. LB $533,176. general contract, GARAGE and REPAIR SHOP at Ashokan Reservoir, Ulster Co., KINGSTON, N. Y. Comr. Water Supply, Gas & Electricity, Municipal Bldg., New York 7, N. Y. Bids July 8. CD 6/16.

Kroy Building Corp., c/o Greenberg & Ames, 303 Fourth Ave., New York 10, N. Y. Owner Builds. Est. $500,000. 6 story APARTMENT, Crescent St. and 31 Ave., LONG ISLAND CITY, N. Y. CD 5/9.

▲† William B. Roush Co., Falls Church, Va. CA $3,380,000. 1 story houses at various eastern locations, NEWBURGH, N. Y. Air Defense Command, Stewart Air Force Base, Newburgh, N. Y. Bids June 9. CD 5/26.

▲ Cauldwell Wingate Co., 101 Park Ave., New York 17, N. Y. CA $1,650,000. STUDENT RESIDENCE BLDG., FHA Proj. No. NY-30-CH-18, NEW YORK, N. Y. New York University, 40 Washington Square, New York 3, N. Y. Bids May 26. CD 5/27.

▲ Planet Constr. Corp., 11 W. 42 St., New York 36, N. Y. CA $2,449,000. (10 bidders) 100-200 bed HOSPITAL FY 52, FORT MONMOUTH, N. J. U. S. Eng., 111 E. 16 St., New York 3, N. Y. CD 6/27, under LB.

▲ William L. Blanchard Co., 45 Pioneer St., Newark, N. J., CA Est. $1,500,000. branch STORE, 14 acre tract, MILLBURN, N. J. B. Altman & Co., 5 Ave. and 34 St., New York, N. Y. Bids May 25. CD 5/4.

▲ Raymon R. Hedden, Alden Rd., Nanticoke, Pa. CA $1,235,000. general contract SENILE PATIENTS BLDG. at Clark's Summit State Hospital, CLARK'S SUMMIT, PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. CD 7/1, under LB.

▲ Cynwyd, Inc., 16 Park Ave., Batlimore 1, Md. Separate Contracts. $1,340,000. 134 frame DWELLINGS, Dovedale Court, Brownhill, Elmcroft, Allenwood Rds., north of BALTIMORE, MD.

▲ Baltimore Gas & Electric Co., Lexington Bldg., Baltimore 1, Md. Separate Contracts. $4,600,000. SUBSTATION, steel outdoor structure, 2 brick bldgs., also 4½ mi. pipe line from company's power plant in Westport, two 8 in. steel pipes, welded joints, 4½ acre site, 29 and Huntingdon Sts., BALTIMORE, MD. CD 8/2/51.

▲ William P. Pipscomb, Washington Bldg., Wash. D. C. CA Est. $1,200,000. 4-wing HOSPITAL expansion, BETHESDA, MD. Suburban Hospital, Bethesda, Md. CD 2/4.

Bethlehem Steel Co., Sparrows Point, Md. Separate Contracts. Est. $856,000. annealing lines, COIL STORAGE BLDGS., COLD MILL BLDG., SKIN PASS MILL BLDG., MOTOR ROOM, SHOT BLASTERS, SPARROWS POINT, MD.

SOUTH

HEAVY CONSTRUCTION—BA

† VIRGINIA—BA 8/11—Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington,
York Co.—brick-faced concrete arch bridge 0.169 mi. under Virginia Rte. 238 and approaches, Proj. 1A2, Colonial Parkway; adv. ENR 7/28.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings, $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listings)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily issue in which last previous report was published.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

BUILDINGS—BA

▲ **W. Va., Charleston**—OFFICE—BA 8/23—Doctors Building, Inc., Kanawha Bank & Trust Bldg., office, Quarrier and Brooks Sts. $1,000,000. Plans deposit $100. Extended date. Martins & Son, 1503 Virginia St., Zone 1, archts. CD 6/23.

HEAVY CONSTRUCTION—LB & CA

† **Dist. P. Wks. Office,** Sixth Naval Dist., Custom House, Charleston, S. C., received no bids June 28, addnl. compressed air facilities, U. S. Naval Shipyard, Spec. 48033, CHARLESTON, S. C. CD 6/3.

† **Oliver Meyer & Sons Constr. Co.,** 1115 Poland St., New Orleans, La. CA $524,900. utility lines, water, gas, sanitary sewers, Joint Air Reserve Training Center, NOY 81840, (Belle Chasse) NEW ORLEANS, LA. Officer in Charge of Constr., Eighth Naval Dist., Bldg. 16, Naval Station, New Orleans, (Algiers), La. CD 6/24, under LB.

BUILDINGS—LB & CA

English Constr. Co., Alta Vista, Va., LB $916,582, est. $800,000. Consolidated HIGH SCHOOL, DAYTON, VA.

• Rockingham Co. School Bd., Harrisonburg, Va. Bids July 12. CD 6/27.

▲ **C. F. Braun & Co.,** 100 S. Fremont St., Alhambra, Calif. CA Est. $3,000,000. PLANT, GALLIPOLIS, W. VA. Celanese Corp. of America, 180 Madison Ave., New York, N. Y.

Caldwell & McCann, Box 477, Baton Rouge, La. CA $551,860. AGRICULTURE-EXTENSION BLDG. for Louisiana State University, BATON ROUGE, LA. State Bldg. Auth., State Capitol, Baton Rouge, La. CD 7/14, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

Mich., Flat Rock—Bids Asked—Flat Rock Village, Granville Baker, pres., 3 m.g. filtration plant. Edwin M. Orr, 22148 Michigan Ave., Dearborn, engr.

BUILDINGS—BA

Ind., Connersville—SCHOOL—BA 8/4—Bd. School Trustees, Connersville Public Schools, Connersville, East Side Elementary Schools, W. Erb Hansen, Connersville, archt.

HEAVY CONSTRUCTION—LB & CA

▲ **INDIANA**—Indiana Toll Road Comn., 309 W. Washington St., Indianapolis, Zone 4,

Sollitt Constr. Co., 301 S. Columbia St., South Bend 24, Ind. LB $11,952,670. (6 bidders) 10 service areas (restaurants and filling stations) on northern Indiana East-West Toll Rd., near East Gary, Porter Co.; Rolling Prairie, LaPorte Co.; Elkhart in Elkhart Co.; Brighton, LaGrange Co.; Fremont, Steuben Co. Bids July 13. CD 6/28.

N. Harris, 910 E. Wisconsin Ave., Milwaukee 2, Wis., CA $132,525, paving N. 60th St. MILWAUKEE, WIS. City, Milwaukee, Wis. Bids July 1, awarded July 11. CD 1/20.

Frank J. Henry, Wisconsin Rapids, Wis., LB $151,994 (3 bidders) general contract, swimming pool and bath house, WISCONSIN RAPIDS, WIS. City, Wisconsin Rapids, Wis. CD 6/23.

BUILDINGS—LB & CA

▲ **Leonard H. Krill Co.,** 2169 E. 33 St., Cleveland, O. CA Est. $1,000,000, wholesale grocery WAREHOUSE, Rte. 21 north of Navarre, NAVARRE, O. Equitable Life Assurance Co., 393 7 Ave., New York, N Y. McLain Grocery Co., 113 Erie St. S., Massillon, O., lessee.

Em Dee Constr. Co., 5820 E. 24th St., Indianapolis, Ind., Owner Builds, $500,000 HOMES, on East side in Arlington Manor, INDIANAPOLIS, IND.

Bresler Constr. Co., 919 South Clark St., Kokomo, Ind. Owner Builds. $500,000, HOMES in Terrace Gardens, KOKOMO, IND.

Allied Builders, 803 Hopkins St., Lebanon, Ind. Owner Builds. $500,000, HOMES, in Northfield Village, LEBANON, IND.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **Missouri**—BA 8/4—U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., constr., repair approx. 23,050 lin. ft. pile dike revetment Isbell to Washington Reaches, Mile 125.0 to 66.8 Spec. 56-1. $500,000. CD 6/28.

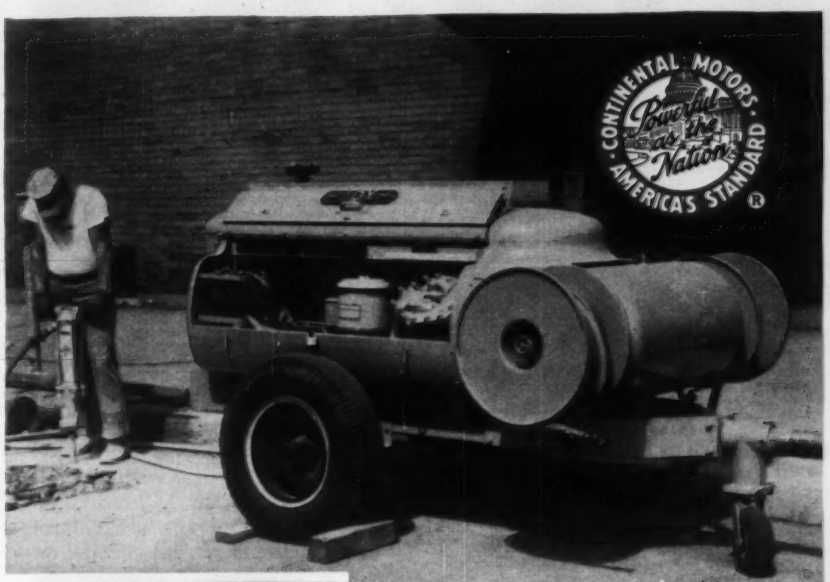
† **Texas**—BA 8/9—Soil Conservation Service, 1st. Natl. Bank Bldg., Temple, (6-56) flood water retarding structures with earthfill embankments, Sites 6M, 6N and 60, Elm Fork of Trinity River, approx. 13 mi. southwest of Muenster, Cooke Co.

† **Wyoming**—TURBINES—BA 8/9—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., hydraulic turbines for Glendo Power Plant, Glendo Unit, Oregon Trail Div., Missouri River Basin Proj., Inv. DS 4450. Extended date. CD 6/7.

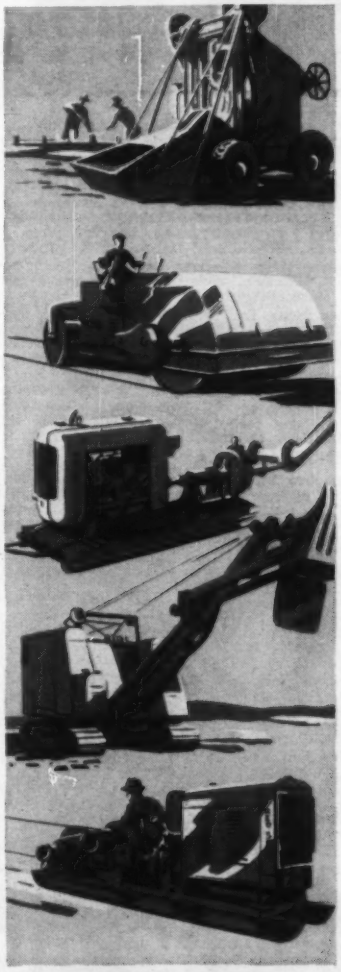
† **Mont., Browning**—GAP FILLER FACILITY—BA 8/10—U. S. Eng., 4725 E. Marginal Way, Seattle 4, Wash., 1,260 sq. yd. masonry base communications bldg., 2.25 mi. grav. road, etc. for gap filler facility at Air Force Station, ENG-45-108-56-7.

BUILDINGS—BA

† **Colo., Denver**—OPEN STORAGE FACILITIES—BA On Or About 8/12—U. S. Eng., Bldg. 52, Denver Federal Center, Denver, Zone 14, open storage facili-



Joy Model 125 portable air compressor, powered by Continental F-226 engine, supplying air for paving breaker.



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ties, incl. 18x26 ft. masonry bldg.; 60x32 ft. prefab metal bldg.; 164x32 ft. rein-con. loading dock; 223x20 ft. rein.-con. loading dock covered with prefab steel structure with open sides; 1,450 ft. railroad spur; 100,000 cu. yds. excav., 71,000 sq. yd. 4 in. gravel pads; 10,800 sq. yds. 4 in. gravel access roads to pads, 15,800 sq. yds. bit. surf. drive and parking, 9,950 ft. 7-strand barbed wire fence, electrical distr. and fence lighting sys. and seeding, Rocky Mountain Arsenal ENG-25-066-56-14. CD 10/20.

† **Colo., Camp Carson**—POST EXCHANGE—BA On Or About 8/16—U. S. Eng., 1709 Jackson St., Omaha 2, Neb., constr. main post exchange, Fort Carson, ENG-25-066-56-4.

▲ **Kan., Lawrence**—HOSPITAL—BA On Or About 8/16—City, Jim Wigglesworth, mgr., hospital addn. $1,000,000. Cooper, Robison, Carlson & O'Brien, 418 Commerce Bldg., Kansas City, Mo., archts. CD 11/24.

▲ **Tex., Houston**—SHOPPING CENTER—Bids Asked—Post Oak Center, Inc., c/o Kagan & Rudy, 905 Commerce St., shopping center, Westheimer and Post Oak Rds. $4,000,000. CD 4/22.

HEAVY CONSTRUCTION—SLC

Tex., Hondo—AIRFIELD IMPRVS.—Texas Aviation Industries, Inc., Hondo, soon lets contract airfield imprvs. at each, Glasscock, Castroville and Hondo Air Bases. Frank T. Drought, 342 W. Woodlawn St., San Antonio, engr. CD 7/13.

BUILDINGS—SLC

▲ **Tex., Fort Hood**—HOUSING—U. S. Eng., P.O. Box 1600, Fort Worth, soon lets contract construct, manage and finance 625 single and duplex apartments. $6,000,000. Chas. E. Armstrong, 6351 Camp Bowie Blvd., Ft. Worth, archt. L. E. Kanto, N. P. Anderson Bldg., Ft. Worth, and Phillips, Proctor & Bowers, 3851 Cedar Springs Ave., Dallas, engrs. CD 4/15.

Tex., San Antonio—SALES SERVICE—Charles Orsinger Buick Co., c/o Ralph H. Cameron, archt., 1519 Transit Tower Bldg., soon lets contract sales-service auto bldg. CD 7/13.

HEAVY CONSTRUCTION—LB & CA

Hawkins Constr. Co., Grand Rapids, Minn. CA $137,539. (3 bidders) street work 71,200 sq. yd. 3½ in. bit. paving, 5,542 cu. yd. grav. base, GRAND RAPIDS, MINN. Village, P. C. Warner, engr., Grand Rapids, Min. Bids June 27. CD 6/17.

Federal Pacific Electric Co., 88 N. Keyser Ave., Scranton, Pa. LB $101,500, est. $145,000. furnishing, metal-clad switchgear and pump-control board for primary pumping station, Chain of Rocks Pumping Plant, Mississippi River, northern edge of city, ST. LOUIS, MO. City, Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., St. Louis 3, Mo. Bids July 12. CD 6/14.

▲ **OKLAHOMA**—State Hy. Dpt., Capitol, Oklahoma City, Okla.— **J. H. Barton Co.**, 1916 Broadway, Oklahoma City 3, Okla., LB $103,877, est. $112,995 (9 bidders) 2 highway grade separations, U. S. 66 and Hy. 33, near Catoosa, Rogers Co.;

Okla.—**Fisher Constr. Co.**, Norman, Okla., LB $101,807, est. $99,135, (6 bidders) 3 bridges, U. S. 66 east of Texas line at Texola, Beckham Co.;

Okla.—**Gragg Constr. Co.**, Henryetta, Okla., LB $278,538, est. $253,263 (8 bidders) bridge over Kiamichi River Hy. 3, east of Antlers, Pushmataha Co.;

Okla.—**Lyles & Buckner**, Commercial Natl. Bldg., Muskogee, Okla., LB $641,347, est. $659,778 (9 bidders) 6 bridges U. S. 66 west of Roland at the Arkansas Line, Sequoyah Co.;

Okla.—Moore Bridge Co., Ada, Okla., LB $375,230, est. $357,659 (6 bidders) 2 highway railroad grade separations, U. S. 69 in McAlester, Pittsburg Co.;

Okla.—**Duard Pyle**, 3409 Classen St., Oklahoma City 6, Okla., LB $498,068, est. $491,367 (7 bidders) concrete, steel bridge over Cimarron River, U. S. 60 at Orienta, Major Co.; LB $174,191, est. $192,525, (11 bidders) 4 bridges at junction of U. S. 66 and Hy. 33 near Catoosa, Rogers Co.;

Okla—**Tway Constr. Co.**, P. O. Box 3321, Oklahoma City 5, Okla., LB $236,433, est. $230,197 (6 bidders) 3 bridges on U. S. 169 near Glenpool, Tulsa Co. Bids July 12. CD 6/28.

OKLAHOMA—State Hy. Dpt., Oklahoma City 5, Okla. received no bids July 12, grade, drain 6.9 mi. Hy. 32 west of Kingston, Marshall Co., est. $112,920; grade, drain 4.814 mi. Hy. 21 between Haworth and Moon, McCurtain Co., est. $64,134; grade, drain 3.064 mi. Hy. 21 south of Moon, McCurtain Co., est. $44,134; grade, drain 4.035 mi. Hy. 21, south of Moon, McCurtain Co., est. $60,315; grade, drain 4.097 mi. Hy. 21 between Moon and Arkansas line, McCurtain Co., est. $66,743. CD 6/28.

▲ **OKLAHOMA**—State Hy. Dpt., Capitol, Oklahoma City 5, Okla.

Okla.—**Amis Constr. Co.**, 1647 Exchange St., Oklahoma City 8, Okla., LB $578,816, est. $560,124, (6 bidders) c. conc. 5.03 mi. U. S. 266 in Checotah, McIntosh Co.;

Okla.—**Burbank Rock Co.**, Ponce City, Okla., LB $103,646, est. $99,483 (3 bidders) grade, drain 3.56 mi. U. S. 66 west of Perry, Noble Co.;

Okla.—**Clark Constr. Co.**, Woodward, Okla., LB $87,966, est. $81,236 (1 bidder) grade, drain and structures 7.917 mi. Hy. 95, south of the Kansas line, Texas Co.; LB $98,645, est. $91,189 (3 bidders) grade, drain and structures 5.538 mi. Hy. 76, north of Stephens Co. line, Garvin Co.; LB $167,101, est. $185,590 (8 bidders) grade, drain 5.825 mi. U. S. 66 east of the Texas line, Beckham Co.;

Okla.—**Cosmo Constr. Co.**, 332 Natl. Bank of Tulsa Bldg., Tulsa, Okla., LB $559,324, est. $550,394 (3 bidders) grade, drain 4.992 mi. U. S. 69 north of McAlester, Pittsburg Co.; LB $272,719, est. $293,231 (5 bidders) grade, drain 1.099 mi. at junction U. S. 66 and Hy. 33 near Catoosa, Rogers Co.; LB $148,201, est. $162,251 (9 bidders) grade drain 4.326 mi. U. S. 169 at Glenpool, Tulsa Co.;

Okla.—**Elliott Bros.**, Perry, Okla., LB $140,108, est. $134,062 (7 bidders) asph. stabil. base single bit. surf. 2.268 mi. Hy 51-C, Payne Co.;

Okla.—**Imperial Paving Co.**, 700 E. Grand St., Oklahoma City 4, Okla. LB $642,630, est. $600,628 (4 bidders) stabil. aggregate base, b. conc. surf. 2.263 mi. U. S. 66, Oklahoma Co.;

Okla.—**W. D. Jeffrey Co.**, 4201 Towson Ave., Fort Smith, Ark., LB $392,019, est. $361,988 (4 bidders) c. conc. 4.058 mi. U. S. 64 at Roland, Sequoyah Co.;

Okla.—**Haskell Lemon**, 3014 W. 49 St., Oklahoma City 7, Okla., LB $285,516, est. $273,493 (8 bidders) stabil. aggregate base, rock asph. surf. 6.9 mi. Hy. 32 at Kingston, Marshall Co.;

Okla.—**Merritt-McKnight Co.**, McAlester, Okla., LB $171,856, est. $158,360 (5 bidders) grade, drain, structures 2.988 mi. Hy. 76 south of the Garvin Co. line, Stephens Co.;

Okla.—**Metropolitan Paving Co.**, 300 S. Indiana St., Oklahoma City 3, Okla., LB $240,536, est. $229,364 (8 bidders) b. conc. wid'n. 3.56 mi. U. S. 66 west of Perry, Noble Co.; LB $227,331; est. $216,541 (5 bidders) b. conc. wid'n. 1.5 mi. U. S. 66 in Perry, Noble Co.;

Okla.—**Steinberg-Boyd Co.**, 1517 S. 79 St., Tulsa, Okla. LB $102,030, est. $97,273 (6 bidders) asph. stabil. base with single bit. surf. 7.988 mi. County Rd. at Dover, Kingfisher Co.;

Okla.—**Park Ward Co.**, Commerce Exchange Bldg., Oklahoma City 2, Okla., LB $92,528, est. $88,254 (9 bidders) asph. stabil. base with single bit. surf. 5.995 mi. on county road, Blaine Co.;

Okla.—**Worth Constr. Co.**, 312 E. Berry St., Fort Worth, Tex., LB $731,430, est. $703,143 (6 bidders) c. conc. 2.045 mi. U. S. 66 east of Bethany, Oklahoma Co. Bids July 12. CD 6/28.

John A. Petty, Longview, Tex., CA $317,368, est. $300,000. dam at Big Sandy Creek for water supply, BOWIE, TEX. City, c/o Mark High, mayor, Bowie, Tex. Bids July 11. CD 6/21;

Jack Moore Constr. Co., Odessa, Tex., CA $133,387, est. $165,000, water supply line from Big Sandy Creek into town (Bowie, Tex.).

Brodie Constr. Co., 764 N. Grand St., Amarillo, Tex. CA $885,541, 48 in. water main from Clarkwood Sta. to a 36 in. main in Savage Lane, CORPUS CHRISTI, TEX. City, City Hall, Corpus Christi, Tex. Bids Jan. 13, awarded July 12. CD 1/19, under LB.

Southwestern Bell Telephone Co., 308 S. Akard St., Dallas, Tex. Own Forces. $150,000, some addnl. telephone (underground) cables; $200,000, addn. of some pole telephone lines, DALLAS, TEX. CD 5/27.

Southwestern States Telephone Co., Irving, Tex. Own Forces. $175,000. overhead and underground telephone cables, IRVING, TEX.

† **Lovering Constr. Co.**, 59 W. Kellogg Blvd., St. Paul, Minn., and **O. J. Eickhof & Sons**, Crookston, Minn. CA $841,506. dormitories at Glasgow Air Force Base, GLASGOW, MONT. U. S. Eng., City-County Airport, Walla Walla, Wash. CD 6/29, under LB.

† **Lowdermilk Bros.**, Espanola, N. M. LB $147,432. airstrip exten., Inv. No. 291-55-10, LOS ALAMOS, N. M. Atomic Energy Comn., c/o Procurement Sec., Los Alamos, N. M. Bids June 29.

BUILDINGS—LB & CA

▲ **Valley View Subdivision**, Bennett and Franklin Ave., Council Bluffs, Iowa, Owner Builds. $3,000,000. HOUSING, east of city near extension of Broadway running east, COUNCIL BLUFFS, IOWA.

H. J. Cross, Rte. 6, Box 775, Sappington 23, Mo. CA $536,700. combination brick, steel, masonry SCHOOL, Chambers Rd. at Day Drive H.H.F.A. Proj. Mo. 54-C-2AA; ELEMENTARY SCHOOL, near intersection U. S. 66 and Florissant Rd., Florissant, Proj. Mo. 54-C 2BB, FERGUSON (ST. LOUIS 21 P.O.), MO. Ferguson-Florissant School Dist. R-2, Bd. Educ., V. C. McCluer, supt. Schools, 200 Church St., Ferguson 21, Mo. Bids July 7. CD 6/29.

▲ **City Bond & Mortgage Co.**, R. A. Long Bldg., Kansas City, Mo.; **J. C. Nichols Co.**, 310 Ward Parkway, Kansas City, Mo., and **Long Constr. Co.**, Rialto Bldg., Kansas City, Mo. Owner Builds. $3,200,000. Wornall Plaza APARTMENTS, Wornall Rd. and 49 St., KANSAS CITY, MO. Tanner & Assoc., 310 Ward Parkway, Kansas City, Mo., archts.

▲ **Cliff House Development Corp.**, c/o Lewis E. Kitchen, R. A. Long Bldg., Kansas City, Mo. Owner Builds. $2,500,000. motor HOTEL, Maiden Lane and Seventh St., KANSAS CITY, MO. Kivett & Myers, 1016 Baltimore St., Kansas City, Mo., archts. CD 2/18/53.

▲ **Kitchen Enterprises**, c/o Lewis E. Kitchen, R. A. Long Bldg., Kansas City, Mo. Owner Builds. $1,500,000. four OFFICE BLDGS., Pennsylvania St. between Seventh and 10 Sts., KANSAS CITY, MO. Kivett & Myers, 1016 Baltimore St., Kansas City, Mo., archts. CD 2/18/53.

▲ **A. L. Huber**, 47 and Crysler Sts., Kansas City, Mo. Owner Builds. $2,000,000. HOUSING, Raytown Rd. and Crysler Ave., KANSAS CITY, MO. Morley & Geraughty, 406 W. 34 St., Kansas City, Mo., archts.

▲ **West Terrace Redevelopment Corp.**, c/o Lewis E. Kitchen Enterprises, R. A. Long Bldg., Kansas City, Mo. Owner Builds. $1,500,000. APARTMENT ninth and Pennsylvania Sts., KANSAS CITY, MO. Kivett & Myers, 1016 Baltimore St., Kansas City, Mo., archts. CD 2/18/53.

▲ **Long Constr. Co.**, 810 Rialto Bldg., Kansas City, Mo. CA $1,500,000, Delco-Remy Battery PLANT, constr. 165,000 sq. ft. floor space on one floor, will be built on 75 acre tract W. of Santa Fe tracks, OLATHE, KAN. General Motors Corp., General Motors Bldg., Detroit, Mich. Awarded July 12. CD 3/2.

▲ **American Can Co.**, Lockwood and Clinton Dr., Houston, Tex., Own Forces. $1,000,000. Container Mfg. PLANT; $110,000, sanitary-storm-water lines; $50,000, site area earthwork, ARLINGTON, TEX. Grand total, $1,160,000. CD 7/1.

Builders Development Corp., c/o S. R. Shepherd, Littlefield Bldg., Austin, Tex. Own Forces. $358,500, Sect. 3, 27 APARTMENT units; $377,150, Sect. 4, 38 DWELLINGS, AUSTIN, TEX. CD 2/7.

Neches Development Corp., c/o George D. Hodgson, Beaumont, Tex. Own Forces. $367,500, 28 DWELLINGS; $391,400, 33 DWELLINGS, in Tract No. 1, BEAUMONT, TEX. CD 5/9.

Charles Munn, 5319 Junius St., Dallas, Tex., CA $486,115, est. $375,000, 68,000 sq. ft. rein.-con. WAREHOUSE, DALLAS, TEX. Firestone Tire & Rubber Co., 502 Exposition St., Dallas, Tex. Bids June 7. CD 5/25.

J. Davis Mayfield, 4605 Cumberland Circle, El Paso, Tex., CA $650,000. SHOPPING CENTER, EL PASO, TEX. Mayfield Development Co., 3130 Durazno St., El Paso, Tex. CD 11/4.

Holiday Homes, c/o L. Blackman, Box 23, Mineral Wells, Tex., Own Forces. $372,600, 27 DWELLINGS; $350,000. 20 DWELLINGS, EL PASO, TEX. CD 6/6.

▲ **Robert E. McKee, General Cont'r. Inc.**, Box 562, El Paso, Tex., CA $2,371,289. two 8 story wings of COUNTY BLDG. remodeling 4 story, 260x260 ft. jail, EL PASO, TEX. City of El Paso, Fred Harvey, mayor, and El Paso County, c/o Hugh McGovern, Jr., co. judge, El Paso, Tex. Bids June 21. CD 5/19.

† **Southwest Ball & R. F. Ball Constr. Co.**, Box 507, San Antonio, Tex. CA $524,923, POST EXCHANGE and CAFETERIA, ENG-41-443-55-134, FORT HOOD, TEX. U. S. Eng., 100 W. Vickery Blvd., Fort Worth, Tex. Bids June 17. CD 7/23, under LB.

▲ **W. E. Best & Joe A. Best, Jr.**, Box 1409, Wichita Falls, Tex., CA $2,652,267. construct, manage, finance, permanent family HOUSING, ENG-41-443-55-132, FORT HOOD and KILLEEN, TEX., U. S. Eng., 100 W. Vickery Blvd., Fort Worth, Tex. Bids June 16, awarded June 30. CD 6/21 under LB.

▲ **Blume Home Builder**, 5423 Old Richmond Rd., Houston, Tex., CA $350,000. Lot 3, 15 DWELLINGS; CA $377,000, Lot 4, 24 DWELLINGS; CA $359,625, Lot 7, 21 DWELLINGS HOUSTON, TEX. Grand total $1,086,625. Edgar Blume, 5423 Old Richmond Rd., Houston, Tex. CD 5/11.

Michael J. Lorino, 819 Janisch St., Houston, Tex. Day Labor. $355,000. 25 DWELLINGS, HOUSTON, TEX. CD 5/11.

Wesley Nelius, c/o Ira Berne, Westbury Addition, Houston, Tex. Force Account. $365,000, 25 DWELLINGS, HOUSTON, TEX. CD 5/11.

J. Sam Owens, Box 1151, Longview, Tex., CA $350,000. modification of PETROLEUM BLDG., LONGVIEW, TEX. Earlee Industries (Earl Hollingsworth and Lee Travis), Longview, Tex. CD 7/14.

▲ **Genell, Inc.**, 5816 Lovers Lane, Houston, Tex. Owner Builds. $365,000, No. 1, 30 DWELLINGS; $369,175, No. 2, 39 DWELLINGS; $410,185, No. 3, 41 DWELLINGS, MESQUITE, TEX. Grand total $1,144,360. CD 5/5.

Burgher Constr. Co., 3027 Main St., Dallas, Tex., CA $407,195 (A) 30 DWELLINGS; CA $373,115 (B) 24 DWELLINGS, MESQUITE, TEX. Cedric Burgher, 3027 Main St., Dallas, Tex. CD 5/6.

R. T. Collins, 2429 Oaklane St., Tyler, Tex., CA $500,000. SHOPPING CENTER, VICTORIA, TEX. Pinkerton, Davis & Kirkpatrick, Peoples Bank Bldg., Tyler, Tex. CD 7/13.

▲ **Riedesel Lowe Constr. Co.**, 501 E. 15 St., Cheyenne, Wyo., CA $1,348,837, 12-room ELEMENTARY SCHOOL, JUNIOR HIGH SCHOOL, CHEYENNE, WYO. School District No. 1, 2118 Central Ave., Cheyenne, Wyo. Kellogg & Kellogg, 2309 Warren Ave., and Sam Hutchings, 1903 Thomas Ave., Cheyenne, Wyo., archts. Bids July 12. CD 12/28.

FAR WEST

HEAVY CONSTRUCTION—BA

† **Idaho**—BA 8/4—Bureau Reclamation, Dpt. Interior, Rupert, laterals from Group 4 wells, north of Paul, Minidoka Co., Northside Pumping Div., Minidoka Proj., Spec. 100C-230. CD 9/4/44.

† **Wash., Young's Lake**—MILITARY INSTALLATION—BA 8/10—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, clearing, road and sidewalk constr., mess hall, barracks and other bldgs. for Military Installation, Inv. 55-260. Plans deposit $100. Extended date. CD 6/23.

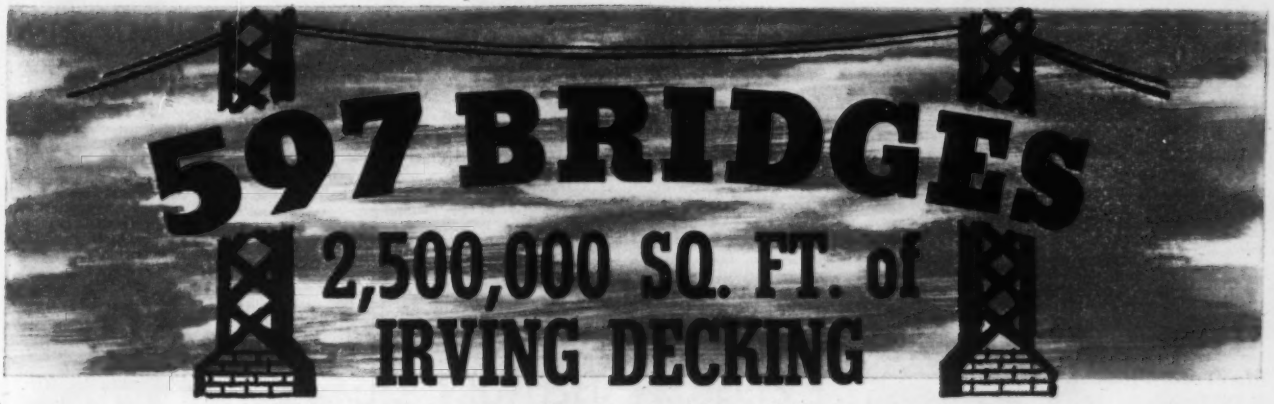
▲† **Calif., Santee**—AIR FORCE FACILITY—BA 8/15—Convair, 1995 Bay Front Ave., San Diego, Zone 13, Camp Elliot Air Force Facility for Air Force. $2,000,000. Plans deposit $100.

Wash., Sunnyside—BA 8/15—City, City Hall, water system for Harrison Hill dist. $180,000.

Wash., Sunnyside—BA 8/15—City, City Hall, sewerage system for Harrison Hill Dist. $105,000. CD 1/5.

† **Idaho**—TRANSFORMERS—BA 8/18—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Firth, Schedule 1, Item 1, three 115,000-volt-insulated, 69,000-115-volt, single phase, 60-cycle outdoor, oil-immersed, wound-type, potential transformers; Item 2, six 115,000-volt-insulated, 200/400- to 5-amperes, single phase, 60-cycle, out-

(Continued on page 72)



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2,500,000 SQ. FT. of IRVING DECKING

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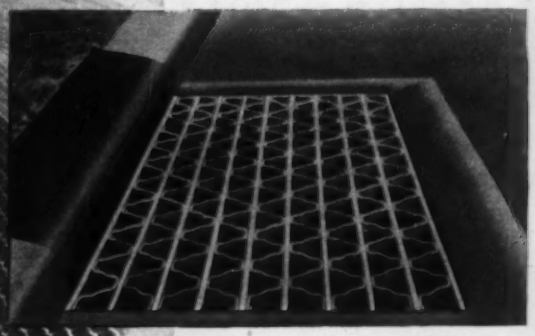

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ESTABLISHED 1902

OFFICES and PLANTS at

5063 27th St., LONG ISLAND CITY 1, N. Y. • 1863 10th St., OAKLAND 20, CALIFORNIA

(Continued from page 70)

door, oil-immersed, wound-type current transformers for Goshen Sub-station, Palisades Proj., Inv. No. DS-4466. CD 9/30/54, under Earthwork, Waterways.

BUILDINGS—BA

California—SHOPS, etc.—BA 8/10—State Div. Architecture, 1100 S. Grand Ave., Sacramento, complete redevelopment of shops and maintenance areas at Div. Highways District IX Headquarters, approx. 29,300 sq. ft., Bishop, Inyo Co. $400,000; constr. 28,300 sq. ft. new shop area facility at Division Highways District V Headquarters, San Luis Obispo, San Luis Obispo Co. $350,000. Plans deposit $25 each.

Utah, American Forks—SCHOOLS—BA About 9/19—Alpine School Dist., Frank Jex, 50 N. Center St., American Fork, elementary school at Lehi, CD 8/31/50, under Utah, Lehi; elementary school 2nd South St. between Center and 1st East Sts. Wm. Rowe Smith, 1555 E. 3900 South St., Salt Lake City, archt.

HEAVY CONSTRUCTION—LB & CA

ARIZONA—State Hy. Dpt., 17th Ave. and Jackson St., Phoenix,

Ariz.—**Lyle Price Constr. Co.**, Box 642, Flagstaff, Ariz. CA **$199,949.** Seligman Overpass, concrete overpass and approaches, Yavapai Co.;

Ariz.—**Fisher Contg. Co.**, Box 6303, Phoenix, Ariz., CA **$157,750,** Kingman-Ash Fork Hy. overpass structure approaches, Yavapai Co., awarded July 11. CD 6/17.

ARIZONA—State Hy. Dpt., 17th Ave. and Jackson St., Phoenix,

Martin Constr. Co., 600 E. 20 St., Tucson, Ariz., CA **$546,930,** select material, aggregate base, bit. plant mix and 3 span overpass structure, 6 mi. Benson-Tucson Highway, Pima Co. Awarded July 11. CD 7/15.

ARIZONA—State Hy. Dpt., 17th Ave. and Jackson St., Phoenix,

Ariz.—**Harper Constr. Co.**, 4416 N. 27th Dr., Phoenix, CA **$159,228,** reshaping road surface agg. base, bit. surface treatment, 30⅓ mi. Wicken-Kingman Highway, State Route 93, Yavapai Co.;

Ariz.—**Larsen Contg. Co.**, Box 1790, Phoenix, CA **$221,663,** select material, agg. base, bit. road mix 2½ mi. Superior-Winkelman Hy., State Route 177, Pinal Co. Awarded July 11, CD 6/17.

N. W. White, Pier 65, Seattle, Wash., LB **$532,632** (3 bidders) primary type treatment plant, SEATTLE, WASH. Southwest Suburban Sewer Dist., 10023 16 Ave. S.W., Seattle, Wash. CD 6/28.

G. R. Leischner Constr. Co., 1201 W. 92 St., Seattle, Wash., CA **$85,774** (5 bidders) remodeling and bldg. work in 13,000 sq. ft. area of Pier 37 transit shed at Port of Embarkation, Inv. 55-68, SEATTLE, WASH. Dpt. Army, Contract Officer, Fort Lawson, Wash. CD 6/9.

BUILDINGS—LB & CA

▲ **Paulsen Constr. Co.**, 1425 Jefferson St., Salt Lake City, Utah, CA **$1,258,500,** general constr. Southeast HIGH SCHOOL, SALT LAKE CITY, UTAH. Bd. Educ., 440 E. First South St., Salt Lake City, Utah. Bids June 9. CD 6/23, under LB.

C. Overaa & Co., 520 16th St., Richmond, Calif., CA LABORATORY and OFFICE addn. RICHMOND, CALIF. California Spray Chemical Co. (Standard Oil Co.) Lucas St. and Ortho Way, Richmond 4, Calif.

▲ **Stolte, Inc.**, 8451 San Leandro St., Oakland 21, Calif., CA **$1,634,221,** 6 story COUNTY JAIL WING, SACRAMENTO, CALIF. Sacramento Co., 7 and I Sts., Sacramento, Calif. Bids July 13. CD 7/15, under LB.

▲ **Haas & Haynie,** 275 Pine St., San Francisco, Calif., CA **$2,634,000** (first unit) 150,000 sq. ft. rein.con. SHOPPING CENTER, near SAN JOSE, CALIF. Macy's Department Store, O'Farrell and Stockton Sts., San Francisco, Calif. Dudley Dean & Assocs., 58 2 St., San Francisco, Calif., engrs. Victor Gruen, 971 Sutter St. San Francisco, Calif. archt. Awarded July 8. CD 3/18/54, under Calif. East San Jose.

CANADA

HEAVY CONSTRUCTION—BA

Que., Valcartier—STEAM DISTR. SYSTEM, etc.—BA 8/3—Defence Const. Ltd., 56 Lyon St., Ottawa, Ont., exten. steam distr. sys. and heating of existing bldgs. at Army Camp. $300,000. Plans deposit $100.

▲ **British Columbia**—BA 8/4—British Columbia Power Comn., P.O. Box 500, Victoria, Upper Campbell Lake Dam, 2,000 ft. long, 75 ft. high rock fill dam with concrete spillways for water storage for Ladore Falls and John Hart Developments, Vancouver Island (1st Stage). $9,000,000. CD 3/9/54.

BUILDINGS—BA

N. S., Woodside—ADMISSION—BA 8/17—Dpt. Hys. & P. Wks., Halifax, admission bldg., Nova Scotia Hospital. $400,000. Plans deposit $200. C. D. Davison & Co., 95 Dresden Row, Halifax; archt.

▲ **Yukon Territory, Whitehorse**—HOSPITAL—BA 8/24—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., 120-bed hospital, incl. nurses' residence, male staff and married quarters, power house, laundry, several doctors' residences, nurses' aid quarters, garages and workshops. $3,000,000. Plans deposit $700. Rule, Wynn & Rule, 11422 Jasper Ave., Edmonton, Alta., archts. E. A. Gardner, c/o owner, ch. archt. CD 12/15.

BUILDINGS—LB & CA

Ont., Toronto—PLANT and OFFICE—Federated Metals of Canada, Ltd., East Don Roadway, soon lets contract 1 story, no basmnt. approx. 102x322 ft., steel, brick and block plant and office. $290,000. A. G. Facey, 991 Bay St., archt. Edgar A. Cross, 991 Bay St., engr.

HEAVY CONSTRUCTION—LB & CA

▲ **Poole Constr. Co. Ltd.**, 10503 109 St., Edmonton, Alta., CA, **$2,000,000,** 200-unit housing R.C.A.F., COLD LAKE, ALTA. Central Mortgage & Housing Corp., 10006 107 St., Edmonton, Alta. Bids June 1, awarded July 11. CD 5/23.

▲ **BRITISH COLUMBIA**—B. C. Govt., Parliament Bldgs., Victoria,

Poole Eng. Co., Ltd. & Raymond International Co., Ltd., 1104 Hornby St., Vancouver, B. C., LB **$2,053,891,** 1,100 ft. cantilever structure with main opening of 485 ft., and side spans of 305 ft. over west arm of Kootanay Lake at Nelson. Bids July 6. CD 6/8.

BRITISH COLUMBIA—B. C. Govt., Parliament Bldgs., Victoria,

Columbia Constr. Co. Ltd., Terrace, B. C. LB, **$698,627** Proj. 629, 8.85 mi. Terrace-Kitimat Hy., Lakelse-Kitimat River Section. Bids July 5. CD 6/27.

Benjamin Bros., Ltd., 865 Tache Ave., Winnipeg, Man., CA **$433,000.** 36, 42, 48, 66, 72, 84, 90 in. pipe sewers in R. C. A. F. property, west of Whytenold Rd., ST. JAMES, MAN. Rural Municipality of St. James, J. S. Hanna, clk., St. James, Man. W. L. Wardrop & Assocs., 456 Notre Dame Ave., Winnipeg, Man., engr. CD 2/11/44.

Beaver Constr. Co., 6825 Clanranald Ave., Montreal, Que., CA **$332,424,** (11 bidders) sewers, water mains, house services on site of new Village of Iroquois in connection with St. Lawrence Seaway, ONTARIO. Ontario Hydro-Electric Power Comn., 629 University Ave., Toronto, Ont. Bids June 21. CD 6/3.

ONTARIO—Dpt. Hys., Parliament Bldgs., Toronto,

Antici Constr. Co. Ltd., Lake St. W., St. Catherines, Ont., CA **$200,681** (10 bidders) grading, culverts, granular base 5 mi. Hy. 86 west from Molesworthy. Awarded July 11. CD 4/27/44.

Foundation Co. of Canada, 1220 Bay St., Toronto, Ont., CA **$702,445,** eastern approach to Humber River bridge at Queen St. part of Lakeshore Expressway development, TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids July 8, awarded July 12. CD 7/15, under LB.

▲ **McNamara Constr. Co. Ltd.**, 42 Industrial Rd., Toronto, Ont., CA **$1,747,365,** Queen St. W. exten. from Roncesvalles Ave. to Riverside Dr., part of Lakeshore Expressway development, TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Awarded July 12. CD 7/15, under LB.

BUILDINGS—LB & CA

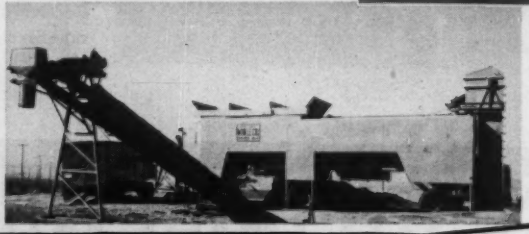
▲ **Commonwealth Constr. Co. Ltd.**, 700 Taylor Ave., Vancouver, B. C., CA $4,000,000. paper reconverting

NOBLE-*MOBILE* BATCHING PLANT MOVES *YOUR* PLANT TO THE JOB SITE

READY FOR TRANSPORTATION BETWEEN JOBS

Saves Erection Costs . . . Increases Profits

No Footings Necessary • Quick Set-Up • Low Moving Cost • No Crane Time • Reduces Mixer Truck Time



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DESIGNERS AND BUILDERS

CEMENT AND AGGREGATE BATCHING PLANTS
BULK CEMENT PLANTS • AGGREGATE BINS
CEMENT SILOS • CONVEYORS AND ELEVATORS

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and box mfg. PLANT, RICHMOND, B. C. Crown-Zellerbach, Ltd., 640 W. Hastings St., Vancouver, B. C. Bids June 30. CD 6/17.

The Austin Co. Ltd., 425 Howe St., Vancouver, B. C. CA $650,000. design and construct 1 story, 240x400 ft. rein.-con. PLANT sect.; 1 story, 50x120 ft. rein.-con. OFFICE and SHOWROOM for bedding concern, Grandview Hy. and Skeena St., VANCOUVER, B. C. Simmons, Ltd., 2034 W. 4th Ave., Vancouver, B. C. Awarded June 7.

▲ **John Laing & Son (Canada), Ltd.,** 231 Marine Blvd., Vancouver, B. C., CA $1,380,241 superstructure for 21 story OFFICE bldg. with rein.-con. core on Nelson St. between Burrard and Hornby Sts., VANCOUVER, B. C. British Columbia Electric Co. Ltd., 425 Carrall St., Vancouver, B. C. Awarded July 8. CD 2/2.

Kenney Constr. Co. Ltd., Drawer 380, Yarmouth, N. S. CA $510,000. FERRY TERMINAL BLDG., YARMOUTH, N. S. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids May 25, awarded July 8. CD 6/2, under LB.

New Style Building Co., Ltd., 642 Bathhurst St., Toronto, Ont. Owner Builds. $522,000. 7 story bsmnt. 57x116 ft. rein.-con. fdn. and frame, brick and block APARTMENT, (underground parking facilities) TORONTO, ONT. E. I. Richmond, 455 Spadina Ave., Toronto, Ont., archt.

George Wimpey & Co. Ltd., 62 Richmond St. W., Toronto, Ont., LB $350,612 (5 bidders) Building No. 22, 3 story, bsmnt., 130x240 ft. 48-suites, brick, steel joists, Regent Park North, TORONTO, ONT. Housing Auth. of Toronto, City Hall, Toronto, Ont. Bids July 8. CD 6/10.

▲ **Sterling Constr. Co. Ltd.,** 2494 Sandwich St. E., Windsor, Ont., CA $2,337,334 (8 bidders) 560-bed TB treatment unit at Ontario HOSPITAL(5 story central sect. for administration, two wings for wards, WOODSTOCK, ONT. Dpt. P. Wks., Parliament Bldg., Toronto, Ont. Awarded July 8.

Newton Constr. Co. Ltd., 568 Victoria St., Sherbrooke, Que., CA $450,000, asbestos mine SERVICE and ADMINISTRATION BLDGS., EAST BROUGHTON, QUE. Carey Canadian Mines, Ltd., East Broughton, Que. General Engr. Co., Ltd., 100 Adelaide St. W., Toronto, Ont., engr.

▲ **Aime Boileau Jr.,** 1125 Deguire Blvd., Montreal, Que., Owner Builds, $4,000,000. HOUSING program, incl. 222 bungalows and cottages, MONTREAL, QUE.

▲ **Louis Donolo, Inc.,** 8320 St. Lawrence Blvd., Montreal, Que., CA $2,500,000. (7 bidders) superstructure of 13 story OFFICE, University and Laguachetiere Sts., MONTREAL, QUE. Terminal Centre Corp., c/o I. Rudnikoff, 1637 Sherbrooke St. W., Montreal, Que. Bids June 28, awarded July 12. CD 6/21.

B. Kaplan Constr. Co. Ltd., 4120 City Hall Ave., Montreal, Que. Owner Builds. $700,000. 4 story, bsmnt., 107x187 ft. rein.-con., brick and block 65-suite APARTMENT, MONTREAL, QUE. George Shubin, 4326 Sherbrooke St. W., Montreal, Que. archt. Irving S. Backler, 5253 Decarie Blvd., Montreal, Que., engr.

▲ **Enterprises Val Martin Ltd.,** 770 Notre Dame St., St. Martin, Que., CA Est. $2,225,000. 298 low rental DWELLINGS, ST. MARTIN, QUE. Enterprises Val Martin, Ltd., 770 Notre Dame St., St. Martin, Que. P. Calangelo, 8259 St. Laurence Blvd., Montreal, Que., archt. CD 7/13.

AMERICANS ABROAD

BUILDINGS—LB & CA

Catalytic Constr. Co., 1528 Walnut St., Phila., Pa., U. S. A. CA cupruous ammoniacal acetate PLANT purification sys., MARL, WEST GERMANY, Chemische Werke Huls, Marl, West Germany.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Tex., Tyler**—City, bond election Aug. 20, lake-dam (water supply), $1,522,102; water treatment plant addn., $250,000; water pumping unit, $148,199; c.i. water main, lake-dam to filtration plant, $765,761; water storage increases, elevated steel, $100,000; 2 m.g. elevated steel water storage, $375,000; c.i. water distr. lines, $640,657; supplementary water lines throughout city, $446,572; c.i. water lines (laterals), $204,135; WW sys. rehabilitation work, $200,000. Wisenbaker, Fix & Assocs., Tyler, consult. engrs.

▲ **Tex., Waxahachie**—City and Ellis County Water Control & Imprvt., Dist. No. 1, Waxahachie, water retention dam. $1,500,000. Forrest & Cotton, 803 Praetorian Bldg., consult. engrs. CD 3/17.

SEWERS, WASTE DISPOSAL

Calif., Riverside—City, City Hall, sewage treatment plant addn. $500,000. Headman, Ferguson & Carollo, 3308 N. 3 St., Phoenix, Ariz., consult. engrs. CD 11/15/44.

▲ **Mo., Springfield**—City, Warren M. Turner, mayor, imprv. sewerage sys. incl. disposal plant, relocation of present one and rehabilitation and constr. sewer trunks, $9,800,000, Consoer-Townsend & Assoc., 351 E. Ohio St., Chicago, Ill., consult. engrs. CD 9/1.

▲ **Neb., Lincoln**— Sanitary Dist. 1, of Lancaster Co., Court House, Lincoln, sewers. $2,000,000.

▲ **Tex., Tyler**—City, bond election Aug. 20, sewage disposal unit, $500,000; storm sewers, $750,000; sanitary sewer collection lines, $2,000,000; sewage lift stations, $200,000; sanitary sewer rehabilitation work, $401,574. Wisenbaker, Fix & Assocs., Tyler, consult. engrs.

BRIDGES

▲ **Fla., Miami**—Comrs. Dade Co., causeway from Key Biscayne to Key Largo. $35,000,000. Michael Baker, Jr., P.O. Box 111, Rochester, Pa., consult. engr. CD 11/9/44.

▲ **NEW YORK**—State Bridge Auth., The Gov. Alfred E. Smith State Office Bldg., Albany, Newburgh-Beacon Bridge over Hudson River, tentative site about 1 mi. north of 2 cities approved by John W. Johnson, State supt. P. Wks., $10,000,000.

▲ **O., Akron**—City, Leo G. Walter, service dir., grade elimination (bridge) at Manchester Rd., Wilbeth Rd., over tracks of Pennsylvania, Baltimore & Ohio, Erie and Akron-Barberton Belt Line, the tracks to be relocated, $1,250,000. CD 12/10/43.

▲ **O., Canton**—Comrs. Stark Co., Courthouse, county-wide bridge imprv. program replacing 41 bridges incl. replacing Oberlin Rd. S. W. viaduct in Massillon, $1,500,000; and Gambrinus Rd. S. W. bridge in Canton, $363,000. Total est. $3,579,727. CD 3/1/54.

STREETS AND ROADS

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Branch Co.—11 mi. US-27 from Coldwater to Tekonssha, $5,000,000.

Calhoun Co.—13 mi. US-12, from US-13 to east of Galesburg, $3,000,000.

Genesee and Livingston Counties—29 mi. M-21 from Flint to Inlay City, $11,000,000.

Isabella and Macomb Counties—30 mi. US-27 from Mt. Pleasant to Harrison, $13,000,000.

Jackson and Washenaw Counties—30 mi. US-12 from Jackson to Ann Arbor, $16,000,000.

Kalamazoo Co.—15 mi. US-13 from M-89 south to Kalamazoo south belt, $9,300,000.

Kent Co.—18 mi. US-16 on Grand Rapids north and south belts, $11,000,000.

Livingston and Oakland Counties—22 mi. US-16 from Brighton to east of Farmington, $12,000,000.

Monroe Co.—3 mi. US-24A from Ohio Line north $1,600,000.

Montcalm Co.—6 mi. US-13 from north of Rockford south $800,000.

Ottawa and Van Buren Counties—26 mi. US-31 from South Haven to Holland by-pass, $14,000,000.

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Speed because . . . one single batch plant can be used for paving jobs formerly requiring dual or two-stop plants. Batching time is reduced, concrete produced at a rate exceeding any other portable plant.

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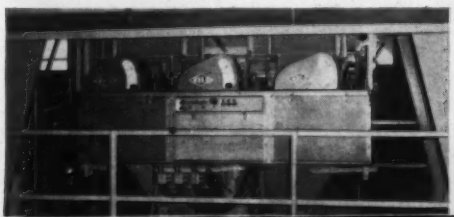

Photo A—This view shows batcher with 150 ton — 4 compartment aggregate bin. Batch silo capacity 900 cu. ft. Storage silo capacity 2300 cu. ft.

Photo B—Center Section view showing the triple-automatic scale beam cabinet with operator's controls mounted in the center directly under the cement scale indicator.

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For further information, write, wire or phone today.

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Roscommon Co.—20 mi. M-76 in St. Helen southeast to M-33, $8,500,000.

Todd and Wadena Counties—11 mi. M-53 from Washington south to 17 Mile Rd., $7,500,000.

Wayne Co.—13 mi. US-24 from Rockwood north, $11,500,000.

17 mi. US-23 from Milan south to M-50, $4,200,000. Carlos Weber, ch. engr.

▲ NEBRASKA—State Dpt. Roads & Irrigation, Lincoln, Douglas and Sarpy Counties—highway constr., Omaha Metropolitan Area. $1,000,000. Howard-Needles-Tammen & Bergendoff, 1805 Grand St., Kansas City, Mo., consult. engrs. CD 7/8/52.

▲ Tex., Dallas—Exchange Park, Wm. A. Blakley & Assocs., Guardian Life Bldg., 15,000 auto parking center, $750,000; weather-conditioned streets, $3,000,000, in 120-acre commercial development program between Mockingbird Lane, Maple and Inwood Sts. Powell & Powell, Thomas Bldg., Blum & Guerrero, 4930 Maple St., and Lane, Gamble & Assocs., 6810 Harry Hines Blvd., consult. engrs.

▲ Tex., Tyler—City, bond election Aug. 20, street imprvs., paving, $1,400,000. Wisenbaker, Fix & Assocs., Tyler, consult. engrs. CD 12/10.

EARTHWORK, WATERWAYS

▲ Calif., El Centro—Imperial Irrigation Dist., 125 S. 5 St., steam electric generating plant addn. $3,238,000. Gibbs & Hill, Inc., 510 W. 6 St., Los Angeles, consult. engr. CD 11/5/53.

▲ Tex., Dallas—Exchange Park, Wm. A. Blakley & Assocs., Guardian Life Bldg., plans by Lane, Gamble & Assocs., 6810 Harry Hines Blvd., landscaping (earth, sodding, planting, mulching, etc.), $750,000; 1-acre lake, $250,000, in 120-acre Commercial Development Program Center, Harry Hines Blvd. between Mockingbird Lane, Maple and Inwood Sts. Powell & Powell, Thomas Bldg., Blum & Guerrero, 4930 Maple St., and Lane, Gamble & Assocs., 6810 Harry Hines Blvd., consult. engrs.

AIRPORTS

▲† Calif., Muroc—TEST TRACK FACILITY—U. S. Eng., 751 S. Figueroa St., Los Angeles, special test tract facility, Edwards Air Force Base. $2,500,000. Holmes & Narver, Inc., 828 S. Figueroa St., Los Angeles, consult. engr. CD 9/16.

▲ O., Cincinnati—AIRPORT—Bd. Comrs. Hamilton Co., Court House, $6,000,000 bond election Nov. 8, Blue Ash Airport, Geo Lemmell, co. engr.

FOREIGN

Africa, Southern Rhodesia—Federal Hydro-Electric Bd., Salisbury, Southern Rhodesia, Karibe Gorge Hydro-electric Proj., 24 units of 74 megawatts capacity; dam will be 400 ft. high, 2,000 ft. long at crest. Chief Design Engr., Div. Irrigation, P.O. Box 8091, Causeway, Southern Rhodesia, engr. Tenders for first stage of work may be ready in August. CD 8/18/52.

PUBLIC BUILDINGS

▲ Calif., Eureka—COURTHOUSE, etc.—Humboldt Co., Court House, voted $3,000,000 bonds courthouse, jail and other county buildings. CD 11/12.

▲ Calif., Sacramento—SCHOOLS—Sacramento City Unified School Dist., c/o Supt., 16 and N Sts., Well C. Wood Junior High School, $1,700,000; plans by Herbert Goodpastor, 1812 "J" St., John Bidwell Elementary School, 65 Ave. and Milford St. $550,000; H. W. Harkness Elementary School, 54 St. and Hogan Dr. $550,000; Collis P. Huntington Elementary School, 40 Ave. and 26 St., $380,000; Mark Hopkins Elementary School, Golf Course Village, $380,000; Hollywood Park Elementary School, Florence and Stacia Way, $650,000; plans by Barovetto & Thomas, 718 Alhambra Blvd., Joaquin Miller Junior High School, Florence and Stacia Way, $450,000; plans by Charles F. Dean, 1521 I St., Hiram W. Johnson Senior High School, 65 St. and 14 Ave. $3,250,000. CD 2/18.

▲ Conn., Meriden—SCHOOLS—City, c/o Bd. Educ., plans by Willard Wilkins, 945 Asylum Ave., Hartford, West Side High School, Lucchini Farm, $1,000,000; East Side High School, E. Main St. and Parkway, $1,000,000. CD 6/2.

▲ Conn., Torrington—SCHOOL—City, Bd. Educ., 68 Church St., plans by Marcel Breuer, 113 E. 37 St., New York, N. Y., high school $3,000,000. CD 2/23.

† Ga., Atlanta—PUBLIC HEALTH SERVICE CENTER—U. S. Public Health Service, 4th St. and Independence Ave., Wash., D. C., Public Health Service Center, consisting of 6 buildings on a 15 acre tract adjacent to Emory University. $12,330,000.

Iowa, Des Moines—SCHOOL—Bd. Educ., 629 3 St., Junior High School, $500,000.

▲ Kan., Leavenworth—SCHOOL—Pub. School of City of Leavenworth, Hugh C. Bryan, supt., 624 Olive St., plans by Williamson, Loebsack & Assoc., 2015 Gage Blvd., Topeka, elementary and Senior High School, $1,659,000. Bond election possibly in October. CD 6/8/54.

† Ky., Louisville—ADMINISTRATION—U. S. Eng., 830 W. Broadway, plans by Joseph & Joseph, Speed Bldg., administration bldg. for Louisville Medical Depot, $750,000. E. R. Ronald & Assoc., 554 S. Third St., consult. engrs. CD 6/28/51.

▲ Mich., St. Clair Shores—CITY HALL—City, Donald J. Harm, c. clk., City Hall, plans by Robert C. Wakely, 19875 Mack St., Detroit, Zone 36, city hall, $1,000,000. CD 7/8.

Minn., Duluth—HUMANITIES—Regents of the University of Minnesota, 404 Admin. Bldg., Main Campus, Minneapolis, plans by Jyring & Assoc., Hibbing, humanities (classroom) bldg. $800,000. CD 5/6.

▲ Minn., Minneapolis—SCHOOL OF MINES—Regents of University of Minnesota, C. A. Smith, purch. agt., 404 Admin. Bldg., plans by Magney, Tusler & Setter, 303 Roanoke Bldg., school of mines on Main Campus, $1,000,000. CD 5/6.

▲ Minn., St. Paul—DAIRY, etc.—Regents of University of Minnesota, C. A. Smith, purch. agt., 404 Admin. Bldg., Minneapolis, plans by Ellerbe & Co., E. 505 First National Bank Bldg., dairy, $900,000; plans by Magney, Tusler & Setter, 303 Roanoke Bldg., Minneapolis, agricultural, chemistry and soils bldg., $900,000 on St. Paul campus. CD 5/6.

▲ Mo., Kansas City—HOUSING—Kansas City Housing Auth., 1220 Independence Ave., Kansas City, Mo., plans by Kivett & Myers, 1016 Baltimore St., Kansas City, Mo., West Bluff Court Housing, Allen Ave. and 23 Trafficway, etc., $1,000,000; plans by Neville, Sharp & Simon, 12 and Walnut Street Bldg., Kansas City, Mo., Miner Court Housing, 10 and Woodland, etc., $1,500,000; plans by G. E. Edison, 1207 Grand St., Kansas City, Mo. Chouteau Court Housing, Troost and Lydia Sts., etc., $900,000. CD 5/3/51.

▲ Nev., Las Vegas—COURT HOUSE—Clark Co. Comm., Court House, bond election Aug. 30, court house, $4,000,000.

▲ O., Bucyrus — SCHOOLS — Bd. Educ., $1,650,000 bond election Nov. 8, two grade schools, $380,000 each; addns. to 4 grade schools. CD 8/26/53.

▲ O., Cleveland Heights—SCHOOLS—City, E. Hill, supt., School Bd., 1749 Lee Rd., $5,000,000 bond election Nov. 8, schools.

O., Dayton—PLANT—City, Herbert W. Starick, mgr., City Hall, lime recovery plant at Ottawa St. yards, to reclaim lime from sludge from water filtration plant, $900,000. Black & Assoc., Inc., Gainesville, Fla., consult. engrs.

▲ O., Maple Heights—SCHOOLS—Bd. Educ., A. E. Hadfeidl, supt., 5500 Clement Dr., $1,200,000 bond election Nov. 8, schools. CD 11/9/53.

Tex., Bay City—HOSPITAL—Matagorda General Hospital, Bay City, plans by Wyatt C. Hedrick, 5201 Fannin St., Houston, hospital addn., imprvs. $500,000.

▲ Tex., El Paso—SCHOOLS—El Paso Independent School Dist., El Paso, plans by Davis & Foster, Mills Bldg., Cotton Avenue Elementary School, $700,000; plans by Carroll & Daeuble, 1001 E. Yandell Blvd., Summit Heights Junior High School, $400,000; plans by Percy McGhee, 1st Natl. Bank Bldg., elementary school on site old Bowie High School, $350,000. CD 11/10.

▲ Utah, American Fork—SCHOOLS—Alpine School Dist., American Fork, plans by Wm. Rowe Smith, 1555 E. 39 South St., Salt Lake City, brick high school, American Fork, $1,000,000; brick high school, Pleasant Grove, $1,000,000; high school, Lehi, $800,000.

Utah, Ogden—ARTS SHOP—State Bldg. Bd., 419 State Capitol, Salt Lake City, plans by Wm. Rowe Smith, 1555 E. 39 South St., Salt Lake City, industrial arts shop, Weber Junior College. $500,000.

Vt., St. Johnsbury—SCHOOL—Town School Dpt., 13 School St., plans by Freeman, French & Freeman, 138 Church St., Burlington, school. $500,000.

Wash., Connell—SCHOOL—School Dist. J51-162, Connell plans by G. M. Rasque, Wash. Trust Bldg., Spokane, high school. $500,000. CD 10/27.

Ont., Kitchener—OFFICE—Dpt. P. Wks., Hunter Bldg., Ottawa, office, 166 Frederick St. $500,000.

▲ Que., Montreal—CITY HALL—City, City Hall, plans by Donat Beaupre, c/o owner, city hall annex addn., east to Bonsecours St. $3,000,000-$4,000,000. Lucien L'Allier, ch. engr. and dir. P. Wks. Dpt., c/o owner. CD 5/20/46.

COMMERCIAL BUILDINGS

Calif., Bakersfield—DWELLINGS—Mt. Vernon Co., 3460 Wilshire Blvd., Los Angeles, plans by L. C. Major & Assoc., 11015 S. Paramount Blvd., Downey, 62 frame, stucco dwellings, Tract 1803. $625,000.

▲ Calif., Buena Park—DWELLINGS—Blair Development Inc., 1763 E. 41 St., Los Angeles, plans by L. C. Major & Assoc., 11015 S. Paramount Blvd., Downey, 221 frame stucco dwellings, Tract 1813. $2,250,000.

▲ Calif., San Anselmo—HOMES SUBDIVISION—Jack Spelman, (developer) c/o Rivers Realty, 731 Sir Frances Drake Blvd., 350 home subdivision (site Raisch Ranch) near here. $10,000,000.

Del., Dover—HOTEL—Dover Hotel Corp., c/o Melvin Ulrich, 4230 Genesee St., Buffalo, N. Y., hotel. $500,000. CD 10/2/46.

D. C., Wash.—APARTMENT—Jolles & Sennett, 1025 Vermont Ave. N. W., plans by Joseph Saunders, 1523 "M" St. N. W., Rock Creek Ford Apartment, Rock Creek Ford Rd. $650,000.

▲ Ill., Chicago—APARTMENT—Baird & Warner, Agt., 215 N. Dearborn St., plans by Harry M. Weese, 612 N. Michigan St., Zone 11, 12 story apartment, 227 E. Walton St. $2,500,000.

Ill., Naperville—COLLEGE—Evangelical United Brethren Church, Dr. E. Craig Brandenburg, secy., Knott Bldg., Dayton, O., addns. to North Central College, $500,000; addns. to Evangelical Theological Seminary, $400,000.

▲ Iowa, Des Moines—PASSENGER DEPOT, etc.—Chicago, Rock Island & Pacific R.R. Co., W. B. Throckmorton, ch. eng., La Salle St. Station, Chicago 5, Ill. passenger depot and service bldg. $2,000,000.

Iowa, LeMars—COLLEGE—Evangelical United Brethren Church, Dr. E. Craig Brandenburg, secy., Knott Bldg., Dayton, O., addns. to Westmar College. $500,000.

Ky., Fort Thomas—APARTMENTS—Jacobs Builders Co., 149 Newman Ave., eight 4-unit apartments, twenty 1 story bsmnt. homes, Highland Ave., $600,000.

Mass. Haverhill—HOSPITAL—Hale Hospital, Buttonwoods Ave., plans by Clinton F. Goodwin, 25 Washington Square, Haverhill, and Aisner & Atwood, con-sult. archts., 10 Newbury St., Boston, hospital addns., alterations, Buttonwoods Ave. $650,000.

Mo., St. Louis County—CLUB—Sunset Country Club, Gravois Rd., west of Lindbergh Blvd., Sappington, Zone 23, plans by Syl. G. Schmidt & Assoc., Railway Exchange Bldg., 611 Olive St., St. Louis, Zone 1, club house to be erected on fdn. of present bldg. which is to be razed. $600,000. CD 12/28.

N. J., Belmar—SCHOOL—Church of St. Rose, 603 Seventh Ave., plans by Eggers & Higgins, 100 E. 42 St., New York 17, N. Y., 2 and 3 story school, incl. classrooms and misc. facilities. $500,000. Bids in September. DiStasio & Van Buren, 136 Liberty St., New York, N. Y., consult. engrs.

N. J., Trenton—STORE—Owner, c/o Louis S. Kaplan, archt., 25 N. Montgomery Ave., department store, Rte. 33 and Windsor Ave. in Hamilton Twp. $500,000.

N. Y. Flushing—APARTMENT—Greenbrier Manor Corp., c/o Shulman & Soloway, archts., 100-15 Queens Blvd., Forest Hills, 6 story apartment, Union Turnpike and Grand Central Parkway, $750,000.

N. Y., Flushing—APARTMENT—Fleetwood Realty Corp., c/o Schulman & Soloway, archts., 100-15 Queens Blvd., Forest Hills, 6 story apartment, Union Turnpike east of Springfield Blvd. $750,000.

N. Y., Flushing—APARTMENT—153 Street Corp., c/o M. & D. Weston, archts., 44 Court St., Brooklyn, Zone 2, 6 story apartment, Parsons Blvd. and 78 Ave. $510,000.

N. Y., Great Neck—OFFICE—National Bank of Great Neck, 1 South Middleneck Rd., main office, Cutter Mille and Middle Neck Rds. $500,000.

▲ N. Y., Jackson Heights—APARTMENT—Village Leasing Corp., c/o George Miller, 125 W. 45 St., New York, Zone 19, 6 story apartment, 80 Ave. and 45 St. $1,000,000.

▲ N. Y., New York—BUILDING—Canada House, c/o Ray Lawson, Canadian Consul General, 620 Fifth Ave., Zone 20, plans by Marani & Morris, 1250 Bay St., Toronto, Ont., Canada, building to house all Canadian Activities in New York, 680 Fifth Ave., southwest corner of 54 St. $8,000,000-$10,000,000. CD 4/20.

▲ N. Y., New York—APARTMENT—Padar Realty Corp., 57-18 Flushing Ave., Maspeth, plans by Sylvan Bien, 33 W. 46 St., Zone 19, 18 story apartment, 910 Fifth Ave., northeast corner of 72 St., $1,700,000.

▲ N. Y., New York—APARTMENT—Sutton Manor Corp., 16 E. 52 St., Zone 22, plans by Mayer & Whittlesey, 31 Union Square, Zone 3, 19 story apartment, 401-411 E. 53 St. $2,750,000.

▲ N. Y., New York—APARTMENT—W. E. J. Holding Corp., 2140 Williamsbridge Rd., Zone 21, plans by Melvin E. Kessler, 551 Fifth Ave., Zone 17, 6 story apartment, Luntig Ave. between Esplanade and Pelham Parkway South. $1,100,000.

▲ O., Dayton—HOSPITAL—College Hill Hospital, 3032 Campus Dr., hospital expansion, incl. 1 level fire-resistant hospital addn. with lower secondary level on rear of bldg. on campus and Drexmore Drs. adjacent to present bldg. $1,000,000.

O., Dayton—DORMITORY—Evangelical United Brethren Church, Dr. E. Craig Brandenburg, secy., Knott Bldg., dormitory and chapel at United Theological Seminary. $500,000.

▲ O., Toledo—HOMES—Shoreland Heights, Inc., I. F. Cuprys, pres., 3849 Hazelhurst St., 132 homes in Washington Twp. north of Ottawa River and east of Summit St., exten. to Michigan State Line, $1,000,000.

O., Westerville—COLLEGE—Evangelical United Brethren Church, Dr. E. Craig Brandenburg, secy., Knott Bldg., Dayton, O., addns. to Otterbein College. $500,000.

O., Youngstown — SHOPPING CENTER — John Stratos, 6726 Trenholm Rd., shopping center, incl. stores, skating rink, drive-in restaurant, filling station, etc., on 7400 block Market St. in Boardman Twp. near Rtes. 7 and 224. $500,000.

▲ Pa., Flourtown—SHOPPING CENTER—Samuel Schofran Assoc., 122 E. 42 St. New York, N. Y., plans by George W. Neff, 1520 Locust St., Phila., shopping center, parking lot. $3,000,000.

▲ Pa., Phila.—APARTMENT—Nicholas J. Brandolini, 845 N. 19 St., apartment, Wissahickon and Chelton Aves. $2,000,000.

Pa., Phila.—CHURCH, etc.—Our Lady of Ransom R. C. Church, 5450 Roosevelt Blvd., church, school, rectory, convent. $500,000.

Pa., Reading—COLLEGE-Evangelical United Brethern Church, Dr. E. Craig Brandenburg, secy., Knott Bldg., Dayton, O., addns. to Lebanon Valley College. $500,000.

Pa., Reading—COLLEGE—Evangelical United Brethern Church, Dr. E. Craig Brandenburg, secy., Knott Bldg., Dayton, O., addns. to Albright College. $500,000.

▲ Tex., Abilene—SHOPPING CENTER—Sears-Roebuck & Co., c/o Tom Wagley, realtor, Abilene or Bob Ort, 4525 Penoma Rd., Dallas, shopping center, $1,500,000. CD 6/27, under Owner, c/o realtor as owner.

▲ Tex., Dallas—OFFICES, etc.—Exchange Park, Wm. A. Blakley & Assocs., Guardian Life Bldg., plans by Lane,

Gamble & Assocs., 6810 Harry Hines Blvd., Office Bldg. No. 1, $3,500,000; Office Bldg. No. 2, $4,000,000; Office Bldg. No. 3, $2,875,000; Office Bldg. No. 4, $1,750,000; Office Bldg. No. 5, $5,250,000; 250,000 sq. ft. masonry medical center, $4,000,000; retail shops, $2,000,000; department store, $2,500,000; 1,000 capacity hotel, $12,000,000; market, $1,000,000; service center, $750,000, in 120-acre Commercial Development Program Center, on Harry Hines Blvd. between Mockingbird Lane, Maple and Inwood Sts. Powell & Powell, Thomas Bldg., Blum & Guerrero, 4930 Maple St. and Lane, and Gamble & Assocs., 6810 Harry Hines Blvd., consult. engrs.

Tex., Houston—ADVERTISING CENTER—Arnett Smith, Sterling Bldg., plans by Al Carlson, c/o owner, 5 to 6 story, 100,000 sq. ft. masonry advertising center, Main St. near Old Spanish Trail, $850,000.

▲ **Tex., Houston**—HOTEL, etc.—Square D Development Co., c/o E. A. Hail of Duncan G. Allen Assocs., 4207 Polk St., 21 story combination hotel-office-stores, $8,500,000; 10 story automatic parking garage, 27 floor levels of parking, incl. swimming pool, $1,000,000, Main and Leeland Sts.

Tex., Sweetwater—STORE—Sears Roebuck & Co., c/o E. R. Atkinson, local mgr., Sweetwater, retail store. $500,000.

▲ **Utah, South Salt Lake City** — CENTER — Safeway Stores, Inc., 575 Mission St., San Francisco, Calif. plans by Wm. J. Monroe, Jr., 200 American Bldg., Salt Lake City, dist. center, 50-acre site. $2,000,000.

▲ **Wash., Bellingham**—HOSPITAL—St. Luke's General Hospital, Bellingham, plans by Naramore, Bain, Brady & Johnson, 904 7 Ave., Seattle, rein.-con. hospital addn. $1,000,000.

Wash., Longview—SHOPPING CENTER—A. J. Wights, 5904 N. E. Sacramento St., Portland, Ore., 35,000 sq. ft. shopping center. $500,000.

Wash., Spokane—HOUSING DEVELOPMENT—M. A. Warrington, 3838 Rockwell St., housing development on south side of Spokane Valley. $600,000.

Ont., London Twp.—HOUSING—University Heights Development Co., W. G. Davies, 174 King St., 65 brick homes. $975,000.

▲ **Que., Montreal** — STORE and OFFICE — Canadian American Land Co., 1330 Sherbrooke St. W., plans by Andre Blouin, 515 Cote de St. Antoine Rd., structural steel frame, store and office bldg., rein.-con. fdn., 11-story above ground, two below; underground garage equipped with car lift. $2,000,000.

INDUSTRIAL BUILDINGS

Ga., Atlanta—PLANT—General Motors Corp., General Motors Bldg., Detroit, Mich., 86,000 sq. ft. expansion of Buick-Oldsmobile-Pontiac Assembly Plant. $800,000.

▲ **Md., Baltimore**—PARKING GARAGE—Chas. R. Scrivener, 240 S. Hilton St., plans by Taylor & Fisher, story, 65x160 ft. with 70x78 ft. second floor, rein.-1012 N. Calvert St., Zone 2, 13 story, brick, concrete, steel parking garage on present site of Keiths Theater, Park Ave., and Clay St., $1,352,400.

Minn., Clarkfield—PLANT—Farmers Co-operative Creamery Assn., Clarkfield, milk drying plant. $500,000.

▲ **Mo., Louisiana**—PLANT—Hercules Powder Co., Delaware Trust Bldg., Wilmington 99, Del., pentaerythritol plant. $6,000,000.

▲ **O., Cleveland**—PLANT—Dobeckmun Co., 3301 Monroe St., plans by George S. Rider Co., engr.-archt., Terminal Tower, 100,000 sq. ft. plant mfg. industrial packaging products. $1,750,000.

▲ **O., Lorain**—PLANT—Universal Atlas Cement Co., subsidiary of U. S. Steel Corp., 100 Park Ave., New York, N. Y. cement plant on 30 acre site along Black River at foot of 15 St. $12,000,000.

▲ **O., Niles**—PLANT—Mallory-Sharon Titanium Corp., c/o Sharon Steel Corp., Drawer 537, Sharon, Pa., and P. R. Mallory and Co., 3031 E. Washington St., Indianapolis, Ind., expansion for titanium plant with more rolling and finishing facilities, $14,500,000.

▲ **R. I., Portsmouth**—REFINING PLANT—Commerce Oil Corp., 515 Madison Ave., New York, N. Y., petroleum refining plant, Arnold Point. $35,000,000. The Lummus Co., 385 Madison Ave., New York, N. Y. consult. engr.

▲ **Tex., Dallas**—POWER—PLANT—Exchange Park, Wm. A. Blakley & Assocs., Guardian Life Bldg., plans by Lane, Gamble & Assocs., 6810 Harry Hines Blvd., power plant, incl. 12,000 tons refrigeration, in 120-acre Commercial Development Program Center, Harry Hines Blvd. between Mockingbird Lane, Maple and Inwood Sts. $1,000,000. Powell & Powell, Thomas Bldg., Blum & Guerrero, 4930 Maple St., and Lane, Gamble & Assocs., 6810 Harry Hines Blvd., consult. engrs.

▲ **Tex., Ingleside**—PLANT—Sunray Mid-Continent Oil Co. & Associated Companies, c/o Pierce Junction, Houston, gasoline plant, 140,000,000 cu. ft. daily gas process capacity. $3,000,000.

▲ **Utah, Bacchus**—PLANT—Hercules Powder Co., Delaware Trust Bldg., Wilmington 99, Del., dynamite plant addn. $2,000,000.

▲ **Wash., Tacoma**—OIL REFINERY—U. S. Oil & Refining Co., c/o C. T. Corp., System, 1000 2 Ave., oil refinery. $10,000,000.

▲ **Ont., Amherstburg**—PLANT—Brunner Mond Canada Ltd., Angus W. Cameron, plant mgr., Amherstburg, plant adn. $3,000,000.

Ont., Millhaven—OIL TERMINAL—Liquifuels, Ltd., 347 Bay St., Toronto, marine fuel oil terminal, three or four 150,000 bbl. tanks, steam plant, dock and control bldg. $750,000-$1,000,000.

▲ **Ont., Sarnia**—CATALYTIC REFORMER—Imperial Oil Ltd., Dr. J. L. Huggett, plant mgr., Sarnia catalytic reformer unit with 13,500 bbl. capacity daily. $5,000,000. CD 11/17/50.

UNCLASSIFIED

California—RURAL DISTRIBUTION LINE—Desert Electric Co-operative, Inc., Twentynine Palms, Calif., 182 mi. rural distr. line and 1,000 kva sub-station, Twentynine Palms Co. $600,000.

▲ **Calif., Los Angeles**—MALL—Los Angeles Co., Court House, plans by J. E. Stanton, Paul R. Williams, Wm. F. Stockwell, Adrian Wilson, Austin Field Fry, 627 S. Carondelet St., civic center mall. $1,750,000.

▲ **Colorado**—RURAL DISTRIBUTION LINES—San Miguel Power Assn., Nucla, Colo., 205 mi. rural distr. line sys. imprvs., incl. two new sub-stations, Nucla. $1,265,000.

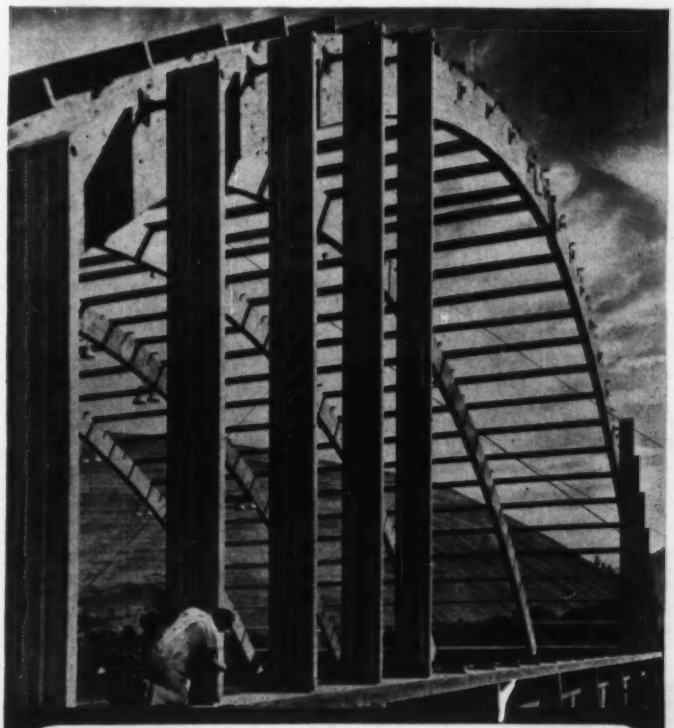
Illinois—RURAL DISTRIBUTION LINES—Tri-County Electric Co-operative, Mt. Vernon, 54 mi. electric distr. line, addnl. substation facilities and sys. imprvs., Jefferson Co. $625,000. CD 7/9/54.

Mo., St. Louis—ELEPHANT HOUSE—City, Zooligical Bd. Control, Geo. P. Vierheller, dir., Primate House, Forest Park, Zone 10, plans by John E. Wallace, staff archt., Primate House, Forest Park, Zone 10, elephant house and arena, related structural and utility features in Zoological section of park, $730,000. CD 2/14.

Montana—RURAL DISTRIBUTION LINES—Lincoln Electric Co-operative, Eureka, 35 mi. rural distr. lines, 59 mi. 69KV transmission line, 7,500 KVA sub-station and sys. imprvs., Lincoln Co., $530,000. CD 6/11/51.

▲ **New York**—BEACH FRONT IMPRV.—President Richmond Boro, Boro Hall, St. George, Proj. PR-98, beach front imprv. between Fort Wadsworth and Miller Field, constr. promenade about 11 mi. long, 2 bathhouses, 2 concession bldgs., 2 beach umbrella and chair shelters, 3 comfort stations, parking fields, playgrounds, bus and playground shelters, drainage, irrigation, planting, lighting, related mechanical work, $3,745,350, Andrews, Clark & Buckley, 305 E. 63 St., New York, Zone 21, consult. engrs.

▲ **Utah**—GENERATING STATION, etc.—Garkane Power Assoc., Richfield, hydroelectric generating station, consisting of three 1,000 kw units on Boulder Creek, 5 mi. north of Boulder and 20 mi. 44 KV transmission line, Garfield Co. $1,200,000. CD 8/20/53.



Field house of Montana State University is framed by 200-foot glulam timber arches spaced 20 feet on centers. Purlins are spaced at 7'-6", and covered with 2-inch tongue-and-groove sheathing and built-up roof surface. Architects were Brinkman and Lenon of Kalispel, Montana; Olsen & Kitchin, Seattle, were consulting engineers; and Hightower & Lubrecht Co. of Missoula were general contractors.

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 23, Massachusetts

STREETS AND ROADS

August 2, Massachusetts

BUILDINGS—BA

Mass., Wellesley—SCHOOL—BA 8/4—Town, Seaward Rd., elementary school, Albion Rd. $450,000. Plans deposit $50, refundable. James H. Ritchie & Assoc., 135 Clarendon St., Boston, archts. CD 11/9.

▲ **Vt., Burlington**—DORMITORY—BA 8/13—University of Vermont and State Agricultural College, Waterman Bldg., women's dormitory on Redstone Campus. $1,800,000. Jaros Baum & Bolles, mech. engrs. and Severud Elstad Rueger, structural engrs., 415 Lexington Ave. Freeman, French & Freeman, 138 Church St., archts. CD 2/8.

▲ **Conn., Storrs**—SCIENCE—BA 8/17—State P. Wks. Comr., State Office Bldg., Hartford, Item 143, Proj. BI-D-183, science bldg., University of Connecticut. $1,800,000. Plans deposit $40. Westcott & Mapes, 109 Church St., New Haven, archts. CD 11/24/53.

Mass., Gloucester—SCHOOL—BA 8/17—City, City Hall, elementary school, Ward 6 off Cherry St. $500,000. Plans deposit $50, refundable. Shepley, Bulfinch, Richardson & Abbott, 1 Court St., Boston, archts. T. F. & R. T. Holloran, 10 Baker St., assoc. archts. CD 10/2/53.

HEAVY CONSTRUCTION—LB & CA

▲† **U. S. Eng.**, 857 Commonwealth Ave., Boston, Mass. cancelled bids to have been opened July 7, Special AAA Facilities, Limestone, Caswell, Connor and Caribou, ENG-19-016-55-161, MAINE. CD 6/13.

BUILDINGS—LB & CA

Poley Abrams Corp., 2 Elm Place, Brookline, Mass. CA Approx. $500,000. RESIDENCE and CLINIC Blackfan St., BOSTON, MASS. Judge Baker Guidance Center, 38 Beacon St., Boston, Mass. CD 6/29.

Leonard Rugo, Inc., 30 Huntington Ave., Boston, Mass. CA $551,900, est. $500,000. North West Elementary SCHOOL, WALTHAM, MASS. City, John W. McDevitt, supt., 55 School St., Waltham, Mass. CD 7/15, under LB.

City, City Hall, Woburn, Mass., rejected bids June 8, Daniel F. Hurld Elementary SCHOOL, Bedford Rd., WOBURN, MASS. LB $488,660. Will re-advertise. CD 6/15, under LB.

DelSignore Constr. Corp., 1 Pleasant View St., Worcester, Mass. LB $646,825, est. $625,000. M-504 No. 1 REFRIGERATION KITCHEN and CAFETERIA alterations, State Hospital, WORCESTER, MASS. State, Dpt. Mental Health, c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. Bids July 15. CD 6/29.

Felix Buzzi & Sons, 612 S. Main St., Torrington, Conn., LB, $539,000, est. $525,000. MAIN HOUSE, POMFRET CENTER, CONN. Pomfret School, Inc., Headmaster's Off., Pomfret Center, Conn. Bids July 15. CD 7/5.

W. J. Megin, Inc., 51 Elm St., Naugatuck, Conn., CA, $519,327, NURSES' HOME and DORMITORY addn., WATERBURY, CONN. Waterbury Hospital, Robbins St., Waterbury, Conn. Bids Mar. 31. CD 4/28, under LB.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 2, Maryland August 26, Pennsylvania

STREETS AND ROADS

August 9, New Jersey August 26, Pennsylvania

BUILDINGS—BA

▲ **Pa., Pittsburgh**—RESEARCH LABORATORY—BA 8/2—Pittsburgh Plate Glass Co., Gateway Center, 2 and 3 story, brick, block, steel development and glass research laboratory, Harmar Twp., near Harmarville, $1,000,000, Skidmore, Owings & Merrill, 575 Madison St., New York, N. Y., archts. CD 3/7.

▲ **D. C., Wash.**—MEDICAL—BA 8/23—General Services Admin., P. Bldgs. Serv., General Services Bldg. 19 and F Sts. N. W., Wash. 25, D. C., pre-clinical medical bldg. as exten. to and remodeling of existing medical school, Howard University. Plans deposit $100. Extended date. CD 7/1. L. Justement, 2011 K St. N. W., archt.

BUILDINGS—LB & CA

Pa., Kobuta—LABORATORY—BA 7/28—Koppers Co., Inc., Koppers Bldg., Pittsburgh, soon lets contract, 2 story, bsmnt., 50x175 ft. brick, block, steel Development Laboratory, 1 story, 74x114 ft. wings, $500,000, Prack & Prack, 119 Federal St., Pittsburgh, archt. CD 7/1.

HEAVY CONSTRUCTION—LB & CA

▲ **Rao Electrical Equipment Co., Inc.**, 314 E. 39 St., New York, N. Y., **Arc Electrical Constr. Co., Inc.**, 739 Third Ave., New York, N. Y. and **Tully & DiNapoli, Inc.**, 127-50 Northern Blvd., Corona, N. Y. LB $3,342,598. furnish, install 69 kw. underground transmission sys., 75th Street Sub-station to 128th St. Sub-station, Contr. P-98, NEW YORK. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids July 8. CD 6/28.

PENNSYLVANIA—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg,

Sullivan Trail Coal Co., West Pittston, Pa. CA $909,-245. slushing of mine areas of Sects. 37-H and 37-I northeastern extension, Luzerne Co. CD 6/8, under LB.

Hull Electric Co., 102 Main St., Bradford, Pa., CA, $1,865. Contr. No. 3 installing electrical work in chlorinator house, BRADFORD, PA. Bradford City Water Auth., City Hall, Bradford, Pa. (Correction-cost). CD 6/22, under CA.

† **Blake Constr. Co.**, 33 E. St., S. W., Wash., D. C. LB $494,025 (1) $170,801 (2) Total bid $664,826. Special AAA Facilities, Brandywine, ENG-49-080-55-71-(61), MARYLAND. U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C. Bids July 19. CD 6/30.

BUILDINGS—LB & CA

Rubin Constr. Corp., 11 W. 42 St., New York 36, N. Y. LB $692,000. (10 bidders) general contract DORMITORY, at Westfield State Farm, BEDFORD HILLS, N. Y. Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. Bids July 14. CD 6/14.

George Rosen & Son, 1650 Broadway, New York 19, N. Y. LB $411,712. general contract Flushing Regional Branch LIBRARY, Kissena Blvd. and Main St., Queens Boro, FLUSHING, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids July 6. CD 6/14.

▲ **Woodbury Shopping Center**, c/o A. H. Salkowitz, archt., 37-60 82 St., Jackson Heights, N. Y. Owner Builds. $1,000,000. SHOPPING CENTER, South Oyster Bay Rd. and Woodbury Rd., HICKSVILLE, N. Y.

▲ **Hillside Terrace Shopping Center**, c/o A. H. Alkowitz, archt. 37-60 82 St., Jackson Heights, N. Y. Owner Builds. $2,000,000. SHOPPING CENTER, on 27 acre tract at intersection of South Oyster Bay Rd. Plainview Rd. and Old Country Rd., HICKSVILLE, N. Y.

▲ **Sokolov Bros. & Sons**, 364 Conklin St., Farmingdale, N. Y. CA Est. $5,000,000. 700 HOUSES on tract of 150 acres on North Ocean Ave. adjoining Canaan Lake, PATCHOGUE, N. Y. Sutton Park at Patchogue, c/o contractor. (Correction-Owner). CD 7/13, under CA.

Polo Park Homes, c/o Lane Realty, 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. $780,000. 30 HOUSES on tract on Jericho Turnpike, WESTBURY, N. Y.

▲ **Olanoff & Son**, c/o John J. Braglia, 1601 Hempstead Turnpike, Elmont, N. Y. CA Est. $1,300,000. 75 HOUSES on tract at Washington Ave. and Manetto Hill Rd., PLAINVIEW, N. Y.

▲ **Westbury Oaks Homes**, c/o Alwin Cassens, Jr., archt., 1455 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. $4,600,000. 200 HOUSES, on tract on Old Country Rd. east of Salisbury Park, WESTBURY, N. Y.

▲ **A. A. LaFountain, Inc.**, 161 Beech St., Hackensack, N. J., CA, $1,900,000. Teaneck Junior High SCHOOL, Taft Rd., TEANECK, N. J. Bd. Educ., Teaneck, N. J. Emilio J. DiRienzo, 22 W. First St., Mt. Vernon, N. Y., archt. CD 6/12/53.

T & C Land Development Co., c/o Maniscalo & Hecker, archts., 332 River St., Hackensack, N. J. Owner Builds, $500,000. 15 HOUSES on tract on Union Ave., UPPER SADDLE RIVER, N. J.

Bruce Village Homes, c/o Peter N. Ciolino, 487A Market St., Saddle River Twp., N. J. Owner Builds. $750,000. 40 HOUSES on tract on Fourth Ave., WESTWOOD, N. J.

▲ **Guy Miller Co.**, 1618 Robinson Blvd., Pittock, Pittsburgh, Pa. CA Est. $2,138,734. 2 story, bsmnt., 700x700 ft. JUNIOR SENIOR HIGH SCHOOL, ELIZABETH, PA. Elizabeth Forward Joint School Auth., Elizabeth, Pa. Celli Flynn, 335 Shaw Ave., McKeesport, Pa., archt.

Mellon Stuart Co., 210 E. Park Way, Pittsburgh, Pa. CA Est. $500,000. 1 and 2 story 218x271 ft. steel, brick WAREHOUSE, McKEES ROCKS, PA. Wm. J. Beitler, Anderson St., Pittsburgh, Pa. Wm. H. Young, 1022 N. Nagley St., Pittsburgh, Pa., archt.

▲ **Austin Co.**, 16112 Euclid Ave., Cleveland, O. CA Est. $5,000,000. design and construct 1 story, steel mfg. PLANT, YOUNGWOOD, PA. Westinghouse Electric Corp., 401 Liberty Ave., Pittsburgh, Pa. CD 7/5.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

August 3, Louisiana

Kentucky—BA 8/5—Commonwealth of Ky., Dpt. Hys., Frankfort, Contr. 15, comprises water supply and sewerage facilities at Lebanon Jct. and Shepherdsville Service Area and elevated tank at Shepherdsville Service Area; Contr. 15A, water supply facilities at Lebanon Jct. and Shepherdsville Service Areas; Contr. 15B, sewerage facilities at Lebanon Jct. and Shepherdsville Service Areas; Contr. 15C, elevated water tank at Shepherdsville Service Area, Kentucky, Turnpike Proj. No. 1, Hardin, Bullitt and Jefferson Counties. Bids 7/7 rejected. Howard, Needles, Tammen & Bergendorf, 1805 Grand Ave., Kansas City, Mo., engrs. CD 7/15, under LB.

† **Tenn., Nashville** — RADAR AIRCRAFT DETECTION STATION—BA 8/16—U. S. Eng., 303 U. S. Court House, radar aircraft detection station here, incl. 6 barracks, power bldg., other bldgs., roads, power house, electrical facilities, sewers, etc. $500,000. CD 1/12.

HEAVY CONSTRUCTION—LB & CA

H. T. Osborn Co., Franklin, Pa. LB, $543,390. Buffalo Creek Dam and Impounding Reservoir, CLARKSBURG, W. VA. Clarksburg Water Bd., 432 W. Main St., Clarksburg, W. Va. Bids June 20.

Audubon Park Raceway, Henderson, Ky. Owner Builds. $750,000. harness race track, stables, HENDERSON, KY. CD 7/8/54.

BUILDINGS—LB & CA

W. G. Dunn, Greenville, N. C., CA $678,800, HIGH SCHOOL, GREENVILLE, N. C. Greenville City School Adm. Unit, Greenville, N. C. Bids June 28. CD 7/8, under LB.

V. Lyn Brabham, Florence, S. C., LB $554,706 three SCHOOLS, Ebenezer, Bishopville, Lynchburg, BISHOPVILLE, S. C. Lee Co. Bd. Educ., Bishopville, S. C. Bids July 12. CD 6/17.

Claussen-Webster, Box 840, Augusta, Ga., LB $707,600, Travelers Rest HIGH SCHOOL, 68,000 sq. ft., Travelers Rest, GREENVILLE, S. C. Bd. Trustees Greenville Co. School Dist. No. 520, 17 Westfield St., Greenville, S. C. Bids July 12. CD 6/10.

Conway-Calmes Constr. & Eng. Co., 21 Celand St., Greenville, S. C., CA $692,446, HOLLIS ELEMENTARY SCHOOL and HOLLIS JUNIOR HIGH SCHOOL addn., GREENVILLE, S. C. Bd. Trustees Greenville School Dist. No. 520, 17 Westfield St., Greenville, S. C. Bids July 7. CD 6/3.

Gilbert Constr. Co., 624 13th St., Augusta, Ga., LB $403,000 COURT HOUSE, WALHALLA, S. C. Bd. Comrs. Oconee Co., Walhalla, S. C. Bids July 13. CD 10/13.

▲ **A. B. Newton & Co.**, Vidalia, Ga., CA, $1,274,631. Buffington Elementary SCHOOL, Macedonia Elementary SCHOOL; Hickory Flat Elementary SCHOOL; Oak Grove Elementary SCHOOL; Holly Springs Elementary SCHOOL; Free Home Elementary SCHOOL; Cherokee Co. Training SCHOOL; Cherokee County High SCHOOL; Woodstock Training SCHOOL; Ball Ground Elementary SCHOOL; Clayton Elementary SCHOOL; CANTON, GA. State School Bldg. Auth., 41 Exchange Pl. S.E., Atlanta, Ga. Bids June 7, awarded July 14. CD 6/10, under LB.

S. J. Curry & Co., Box 1436, Albany, Ga., LB $438,385. East Baker ELEMENTARY and HIGH SCHOOL; West Baker ELEMENTARY SCHOOL; Baker County ELEMENTARY and HIGH SCHOOL, NEWTON, GA. Georgia School Bldg. Auth., 41 Exchange Pl. S. E., Atlanta, Ga. Bids July 7. CD 6/9.

Southern Builders, Inc., Box 1815, Shreveport, La. LB $852,000. GYMNASIUM, MUSICAL FACILITIES and remodeling Byrd HIGH SCHOOL, SHREVEPORT, LA. Caddo Parish School Bd., Shreveport, La. Neild-Somdal, 956 Jordan Ave., Shreveport, La., engrs. CD 9/14/51.

Struck Constr. Co., N. Clay St., Louisville, Ky. LB approx. $400,000. CONVEYOR TRESTLES BLDGS. 1, 2 and 3, Beuchel, LOUISVILLE, KY. General Electric Co., Appliance Park, Louisville, Ky. Bids July 11. CD 6/30.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 3, Michigan

▲ **Mich., Mount Pleasant**—SCHOOL SITE DEVELOPMENT—BA 8/8—Bd. Educ., Carl Wender, secy, site development for high school, Total est. $1,200,-000. Louis C. Kingscott & Assoc., Inc., 511 Monroe St., Kalamazoo, archt. CD 11/30.

BUILDINGS—SLC

▲ **Wis., Madison**—OFFICE—Wisconsin Farm Bureau Federation, 18 S. Thornton Ave., soon lets contract 2 and 3 story, 60x200 ft. and 40x106 ft., concrete, steel, brick office, $1,000,000. John J. Flad & Assocs., 2525 University Ave., engrs.-archts. CD 12/17.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15,

O.—**A. Bentley & Sons Co., Inc.**, 201 Belmont Ave., Toledo, O. LB $2,068,518, est. $2,498,000. (7 bidders) Type T-71 and structures 1.914 mi., SR 120-2.05 UI-1052 (6), Part No. 7 Toledo Expressway System (city of Toledo), Lucas Co.;

O.—**John F. Beasley Constr.**, 20 N. Wacker Dr., Chicago, Ill. LB 8,132,000, est. $7,781,630. (4 bidders) Type structure 0.515 mi., USR 42R-17.50 (Part No. 3) (city of Cleveland), Cuyhoga Co.;

O.—**Nick Cenci & Sons, Inc.**, 844 N. Cassady Ave., Columbus, O. LB $1,249,886, est. $1,611,500. (9 bidders) Type T-71 and structures 2.998 mi. USR 50 (3.58.5.81), Washington Co.;

O.—**Shaw-Comer Corp.**, 7016 Euclid Ave., Cleveland, O. LB $142,843, Est. $156,400. (3 bidders) Type T-35 and B-119 and structures 0.646 mi., C. R. Nos. 9 and 24, S-372 (2), S 373 (3), Ashtabula Co.;

O.—**Clyde L. Moore, Inc.**, R.F.D. No. 1, Lowellville, O. LB **$116,365**, est. $124,900. (4 bidders) Type T-35 on B-119 and structure 0.27 mi., USR 322-5.17, Ashtabula Co.;

O.—**W. M. Brode Co.**, 100 Elizabeth St., Newcomerstown, O. LB **$339,497**, est. $336,300. (4 bidders) Type T-71, T-35 and structure 0.852 mi., USR 52-13.88, Brown Co.;

O.—**The Horvitz Co.**, 4375 E. 146 St., Cleveland, O. LB **$131,690**, est. $144,300. (2 bidders) Type T-35 4.334 mi. SR 3 (5.32-7.71) (city of Parma), Cuyahoga Co.; LB **$156,669**, est $165,500. (2 bidders) Type T-35 3.039 mi. SR 17-(17.49-18.37) USR 21-(8.22-9.88) (Parts Nos. 1 and 2) villages of Independence, Valley View, and Cuyahoga Heights, city of Garfield Heights, Cuyahoga Co.;

O.—**Ohio Road Imprvt. Co.**, 30 E. Broad St., Columbus, O. LB **$547,510**, est. $540,000. (1 bidder) Type T-35 and structures 4.66 mi. SR 18-(2.44-6.70) Medina Co.;

O.—**Northwest Materials, Inc.**, W. Edgerton St., Bryan, O. LB **$142,132**, est. $142,000. (2 bidders) Type T-35 1.057 mi., SR 2-12.7, SR 191-6.98, village of Stryker, Willaims Co.;

O.—received no bids July 12, Type T-35 on B-119, 0.219 mi. SR 91-1 14.40 (village of Hudson, Summit Co.);

O.—cancelled bids to have been opened July 12, Type T-35 6.85 mi., Geauga and Lake Counties. CD 6/17.

▲ **Horvitz Co.**, 4375 E. 146 St., Cleveland, O. CA $1,239,000. parking lot and other development features at Clevland Hopkins Airport, CLEVELAND, O. City, City Hall, Cleveland, O. CD 11/7/52.

Birmingham Constr. Co., Birmingham, Mich. LB **$808-075**, est. $964,550. (10 bidders) sewage treatment works, TIFFIN, O. City, Tiffin, O. Jones, Henry & Williams, 245 Huron St., Toledo, O., engrs. Bids July 15. CD 9/1.

Geo. Sollitt Constr. Co., 109 N. Dearborn St., Chicago 2, Ill.; LB **$784,979**. field house at Horner Park, California and Montrose Ave. CHICAGO, ILL. Chicago Park Dist., 425 E. 14 St., Chicago 5, Ill. CD 6/11/45.

▲ **Square & Marra Constr. Co.**, 3301 Martindale Ave., Indianapolis, Ind., LB **$1,130,000**. Belmont Ave. Interceptor Sewer, first section, INDIANAPOLIS, IND. Bd. Sanitation, City Hall, Indianapolis, Ind. Bids July 11. CD 6/28.

▲ **MICHIGAN**—State Hy. Dpt., 213 S. Capitol Ave., Lansing,

Herlihy Mid-Continent Co., 135 S. LaSalle St., Chicago, Ill. CA **$2,210,614**, est. $2,300,000. bridge on relocation of US-23, U B1 of 9-15-8 C1 (U 417 2), Bay Co. CD 6/2, under LB.

BUILDINGS—LB & CA

E. Mast & Sons Co., 1000 Greenwood St., Zanesville, O. CA **$665,953**. DORMITORY No. 8 on campus grounds, ATHENS, O. Ohio University, Athens, O. Bids July 12, awarded July 15. CD 6/10.

▲ **Mucon, Inc.**, c/o Hugh Wall, atty. for owner, Callahan Bldg., Dayton, O. (David Muss and Nathan Stark, 122 E. 42 st., New York, N. Y. Owners). Owner Builds. $5,000,000. 290 HOMES on 70 acres at northeast corner of Free Pike and Denlinger Rd., DAYTON, O.

T. J. Hume Co., 435 Hamilton Ave., Lorain, O. CA general contract 2 story, 83x120 ft. rein.-con., brick DIAL EQUIPMENT BLDG., 429 Wayne St., SANDUSKY, O. Total est. **$382,000**. Ohio Bell Telephone Co., Harry Newborn, mgr., 416 Columbus St., Sandusky, O., Awarded July 13;
Krebs-Calkins Co., Elyria, O. CA plumbing work (Sandusky, O.).
Damond S. Electric Co., Columbus and Townsend Sts., Sandusky, O. CA electric work. (Sandusky, O.).

▲ **Jos. Bucheit & Sons Co.**, 4040 Simon St., Youngstown, O. CA Est. **$1,000,000**. Downtown GARAGE, PARKING FACILITY, STORES, W. Boardman and S. Phelps Sts., YOUNGSTOWN, O. L. A. Beeghly Foundation, c/o contractor.

Peter Schumacher & Sons, 321 S. Spring St., Mishawaka, Ind., CA, **$500,000**, BANK addn., MISHAWAKA, IND. First National Bank of Mishawaka, 101 Lincolnway, Mishawaka, Ind. Paul F. Jernigan, 22 Lincolnway, archt.

S & W Builders, Plainfield, Ind. Owner Builds. **$500,-000**. HOMES in Brentwood addition, PLAINFIELD, IND.

▲ **E. W. Sproul Constr. Co.**, 173 W. Madison St., Chicago 2, Ill., CA, **$1,107,634**. HIGH SCHOOL addn., ARLINGTON HEIGHTS, ILL. Arlington Twp. High School, 502 E. Euclid St., Arlington Heights, Ill. Bids June 29, awarded July 11. CD 7/13, under LB.

Turner Constr. Co., 105 W. Adams St., Chicago 3, Ill., CA, **$600,000**. WAREHOUSE and OFFICE, 6850 S. Harlem St., BEDFORD PARK, ILL. Minnesota Mining & Mfg. Co., 900 Fauquier St., St. Paul, Minn. Awarded July 15.

▲ **Wilpute Div., Allied Chemical & Dye Corp.**, 40 Rector St., New York, N. Y. CA, **$2,000,000**. 50 COKE OVENS, CHICAGO, ILL. Interlake Iron Co., 11236 Torrence Ave., Chicago, Ill. Henry Lohmiller, 8644 Calumet Ave., Chicago, Ill. archt. Awarded July 14.

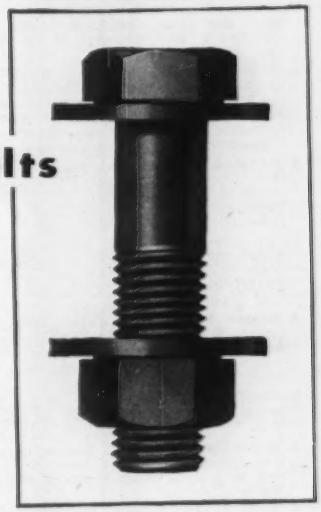
▲ **J. W. Snyder Co.**, 307 N. Michigan St., Chicago 1, Ill., CA, **$2,786,431**, High and Elementary SCHOOL, Ave. "O" and 114 St., CHICAGO, ILL. Bd. Educ., 228 N. La Salle St., Chicago, Ill. Bids June 17, awarded July 14. CD 7/8, under LB.

▲ **Cosmopolitan National Bank Trustee**, 800 N. Clark St., Chicago, Ill., Own Forces, **$1,400,000**. 84 HOMES, DEERFIELD, ILL. Chas. W. Greengard, Box G, Highland Park, Ill., archt.

Superior Constr. Co., 1900 E. 7 St., Gary, Ind., CA, **$600,000**. DIAL EXCHANGE BLDG., DOWNERS

High & Mighty

Lamson High-Strength Structural Steel Bolts



High in strength and mighty in savings explains in a nutshell the growing popularity of Lamson High-Strength structural steel bolts. The holding strength of these bolts cannot be matched by *any other fastening method.* They're stronger statically, as well as from a fatigue standpoint. Yet installation is faster, it requires no scaffolding and much less equipment than old-fashioned riveting.

From the money-saving standpoint, some erectors estimate it costs 25c in labor to install a 25c High-Strength bolt; whereas it costs 75c in labor to install a 5c rivet.

Small wonder that railroads are turning to High-Strength bolting for steel structural erection. It's a dramatic new way to cut building and maintenance costs and get a better, longer-lasting structural job!

The LAMSON & SESSIONS *Co.*
1971 West 85th St., Cleveland 2, Ohio
Plants at Cleveland and Kent, Ohio
Birmingham • Chicago

Lamson & Sessions

Large Bolts • Cotters
Square and Hex Nuts • Weather-tight Bolts • Bent Bolts
Phillips and Clutch Head Screws • Lock Nuts • Cap Screws

GROVE, ILL. Illinois Bell Telephone Co., 206 W. Washington St., Chicago, 6, Ill. Bids May 5, awarded July 11. CD 4/28.

▲ **Noel Developers,** 3004 W. Gunnison St., Chicago, Ill., Own Forces, $1,000,000. 60 HOMES, along Route 58 and Potter Rd., MORTON GROVE, ILL. Nathan Stagman, 23 E. Jackson St., Chicago 4, Ill., archt.

▲ **N. J. Rizzo & Assocs.,** 815 Devon St., Park Ridge, Ill., Own Forces, $1,200,000. 80 HOMES in Capri Lane and Emerson St., MORTON GROVE, ILL. Martin J. Green, 730 Milburn St., Evanston, Ill., archt.

▲ **Chell & Anderson,** 5425 N. Kedzie St., Chicago, Ill., CA, $3,000,000, 2 story, bsmnt., 350,000 sq. ft. FACTORY, MORTON GROVE, ILL. Avon Products Co., 30 Rockefeller Plaza, New York, N. Y. Awarded July 12. CD 1/19.

Titus Ruscitti, 6235 Roscoe Ave., Chicago, Ill. Own Forces. $600,000. 25 HOMES, WHEATON, ILL. A. J. Del Bianco, 5501 Irving Park Rd., Chicago, Ill., archt.

▲ **Bentley Constr. Co.,** 125 E. National Ave., Milwaukee, Wis., CA, $1,000,000. one 280x300 ft. FACTORY and OFFICE, GRAFTON, WIS. Power Products Co., Grafton, Wis. V. K. Boynton, 611 N. Broadway, Milwaukee, Wis., engr.

Selmer Co., 128 N. Pearl St., Green Bay, Wis., CA, $850,000, general contract 3 story, 125x375 ft. STORAGE BLDG., GREEN BAY, WIS. Marathon Corp., Menasha, Wis. Bids July 11. CD 6/23.

Hron Brothers, West Bend, Wis., LB, $491,878 (10 bidders) general contract 1 and 2 story, L-shaped, HIGH SCHOOL, HARTLAND, WIS. High School Dist., Hartland, Wis. Bids July 12. CD 6/22.

Nelson & Co., 1550 Yout St., Racine, Wis., LB, $400,000 general contract 8 story, bsmnt., 63x63 ft. APARTMENT and APARTMENT HOTEL, KENOSHA, WIS. Park Plaza Apartments, Inc., c/o F. W. Cauley, archt., 1519 Hinman Ave., Evanston, Ill. Bids June 22. CD 6/15.

Consolidated Water Power & Paper Co., Wisconsin Rapids, Wis., Day Labor, $400,000. WAREHOUSE addn., WISCONSIN RAPIDS, WIS. M. V. Molsberry, ch. engr.

▲ **O. W. Burke Co.,** 1032 Fisher Bldg., Detroit, Mich. CA $1,600,000. Gothic CATHEDRAL, SANCTUARY, CHURCH EDIFICE, BLOOMFIELD HILLS, MICH. Kirk of the Hills, Walter Casey, chn. Bldg. Comn., Bloomfield Hills, Mich. George D. Mason & Co., 409 Griswold St., Detroit, Mich., archts.

▲ **Bryant & Detwiler Co.,** Penobscot Bldg., Detroit, Mich. CA $3,832,000. Contr. MH-44 two level underground GARAGE, DETROIT, MICH. City, Frank G. Schemanske, pres., Memorial Hall Comn., 151 W. Jefferson St., Detroit, Mich. CD 7/11, under LB.

Barnes Constr. Co., 1310 Wallen St. S.W., Grand Rapids, Mich. CA $554,000. general contract. JUNIOR HIGH SCHOOL, Breton Rd. and Lake Drive, EAST GRAND RAPIDS, MICH. City, Louis F. Battle, clk., East Grand Rapids, Mich. CD 7/15, under LB.

▲ **Sandorf Building Co.,** 16865 James Couzens Hy., Detroit 35, Mich. CA $1,400,000. 100 brick ranch HOMES, 13 Mile and Orchard Lake Rds., FARMINGTON, MICH. Rose-Hill Realty Co., 19470 Grand River, Detroit, Mich.

Martin Dyke & Sons, Holland, Mich. CA $655,000. general contract 4 story HOSPITAL addn., HOLLAND, MICH. City, Holland, Mich. CD 7/15, under LB.

▲ **Wayne Constr. Co.,** N. L. Smokler, pres., 2019 David Stott Bldg., Detroit, Mich. Owner Builds. $1,340,000. Park Villa third section 112 brick HOMES, LIVONIA, MICH.

▲ **Green & Klein Builders, Inc.,** 20030 James Couzens Hy., Detroit 35, Mich. CA Est. $2,300,000. 175 brick HOMES Marqurite, Grange and Newman Section, TRENTON, MICH. Green & Klein, 20030 James Couzens Hy., Detroit 35, Mich.

Edward Schendel & Co., 3419 Fort St., Wyandotte, Mich. CA Est. $900,000. George B. Schaeffer HIGH SCHOOL, Dist. 7, North Line Rd., WYANDOTTE, MICH. Bd. Educ., Ecorse Twp. Schools, 13100 Burns Ave., Wyandotte, Mich. Bids June 15. CD 6/3.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 4, Kansas August 5, Minnesota, North Dakota
August 16, 17, Texas

STREETS AND ROADS

August 4, Kansas August 5, Minnesota, North Dakota
August 16, 17, Texas

KANSAS—BA 8/5—Kansas Turnpike Auth., P. O. Box 681, Topeka,

Douglas Co.—c. conc. 6.73 mi. Proj. 8-32 and 33-8 (1), Plans deposit $13, Raymond W. Campbell, Merriam, sect. engr.

Douglas and Leavenworth Counties—c. conc. 5.04 mi. Proj. 8-34-P (1), Plans deposit $8, Shafer & Kline, Overland Park, sect. engr.

Leavenworth Co.—rigid type turnpike pavement c. conc. 9.83 mi. Proj. 9-35 and 36-P (1). Plans deposit $7, Truman Schlup, 1401 Fairfax Rd., Kansas City, Kan., sect engr.

Sumner and Sedgwick Counties—b. conc. 12.95 mi. Proj. 7-5 and 6 P (1), Plans deposit $8, Wilson & Co., 705 E. Crawford St., Salina, sect. engr. CD 9/30.

▲ **Minn., Bloomington (P.O. Minneapolis)**—STADIUM—BA 8/23—Metropolitan Sports Area Comn., G. L. Moore, chn., Bloomington, general constr. baseball stadium, $2,500,000. Thorshov & Cerny, 400 Metropolitan Bldg., Minneapolis, archts.; Toltz, King & Day, 1509 Pioneer Bldg., St. Paul, engrs.; mechanical work only, incl. plumbing and electric, $100,000. Toltz, King & Day, 1509 Pioneer Bldg., St. Paul, engrs. CD 2/24.

▲ **Minn., St. Cloud**—BA 8/23—City, A. J. Haberkorn, clk., water supply imprvs., river intake, raw water pumping station, water filtration and softening plant, adjacent to Mississippi River in Hester Park in city of St. Cloud, $1,600,000. Consoer, Townsend & Assoc., 351 E. Ohio St., Chicago 11, Ill., engrs. CD 5/31, under LB.

▲ **TEXAS**—BA 9/13—Texas Turnpike Auth., c/o J. C. Dingwall, engr.-mgr., Austin,

Tarrant Co.—Proj. 1, grading, drainage 10 mi. in Fort Worth, over $1,000,000. CD 2/25.

▲ **TEXAS**—BA 9/14—Texas Turnpike Auth., c/o J. C. Dingwall, engr.-mgr., Austin,

Dallas Co.—Proj. 2, 2 concrete bridges at Beckley and Trinity River and grading, drainage in City of Dallas. Over $1,000,000. CD 2/25, under Streets and Roads.

BUILDINGS—BA

Mont., Bozeman—STUDENT UNION—BA 8/17—State Bd. Educ., Helena, 2 story, steel student union addn., Montana State College. $810,000. Plans deposit $50. Nordquist & Sundell, 1233 N. 27 St., Billings, archts. CD 6/22.

BUILDINGS—SLC

Colo., Florence—PLANT—Pabco Products, Inc., 475 Brannan St., San Francisco, Calif., soon lets contract, 1 story, L-shaped, 198x558 ft., structural steel gypsum plant, 1 story, frame office bldg. and 30x23 ft. change house. $600,000.

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul,

Minn.—S. J. Groves & Sons Co., 500 Wesley Temple Bldg., Minneapolis, Minn. LB $1,226,250. (4 bidders) grade, grav. base, 6.8 mi. between 0.8 mi. south of Minnesota City and Mankato Ave. in Winona, Winona Co.;

Minn.—Brown & Leguil, Rte. 1, Mankato, Minn. LB $1,015,823. (5 bidders) grav. base road-mixed bit. surf. 4.9 mi. at Hibbing, St. Louis Co.; LB $569,565. (5 bidders) grav. base, road-mixed bit. surf. 3.3 mi. TH 2 from 0.4 mi. west of west limits of Freetor to W. Jct. TH 61 in Duluth and on TH 61 from 0.2 mi. NE to 0.6 mi. NW of jct. TH 2, St. Louis Co.;

Minn.—Duininck Bros. & Gilchrist, Olivia, Minn. LB $652,100. (6 bidders) grav. base, plant-mixed bit. surf. 15.1 mi. between Milan and Montevideo, Chippewa Co.;

Minn.—Mann Constr. Co., Redwing, Minn. LB $554,732. (4 bidders) grading 7.9 mi. 4 mi. east and 12 mi. east of TH 52 in Cannon Falls, Goodhue Co.;

Minn.—D. H. Blattner & Sons, Albany, Minn. LB $222,576. (7 bidders) grading 9 mi. between W. Stearns Co. line and Jct. TH 71 south of Sauk Centre, Stearns Co.;

Minn.—DeRuyter Bros., Willmar, Minn. LB $390,742. (7 bidders) grav. base, plant-mixed bit. surf. 8.1 mi. between Appleton and Milan, Chippewa and Swift Counties;

Minn.—J. Dieseth Co., Fergus Falls, Minn. LB $268,681. grav. base, c. conc. plant-mixed bit. surf. 1.7 mi. in Fergus Falls, Otter Tail Co.;

Minn.—Fischer Constr. Co., Farmington, Minn. LB $133,954, (5 bidders) grav. base, plant-mixed bit. surf. 7.3 mi. between Mazeppa and Zumbro Falls and at east limits of Red Wing at approaches to Bridge No. 6776, Goodhue and Wabasha Counties;

Minn.—Herbison Constr. Co., Brainerd, Minn. LB $220,176 (6 bidders) grav. base, road-mixed bit. base 5 mi. between Twin Valley and north Jct. TH 31 and TH 32, Norman Co.;

Minn.—McCree & Co., New York Bldg., St. Paul, Minn. LB $383,456. (1 bidder) grav. base, c. conc., plant-mixed bit. surf. 1.9 mi. in Crookston, Polk Co.;

Minn.—Megarry Bros., St. Cloud, Minn. LB $478,254. (8 bidders) grav. base, plant-mixed bit. surf. 14.8 mi. between west limits of Melrose and 1.8 mi. east of Albany, Stearns Co.;

Minn.—R. Minion, Bingham Lake, Minn. LB $100,086. (3 bidders) grav. base, road-mixed bit. surf. 1.5 mi. at and near Windom, Cottonwood and Jackson Counties;

Minn.—Ness Constr. Co., Mahnomen, Minn. LB $103,681 (3 bidders) grading 6.6 mi. between Jct. TH 10 and 2 mi. north of Downer, Clay Co.;

Minn.—Akes Constr. Co., E. 1501 First National Bank Bldg., St. Paul, Minn. LB $263,622. (3 bidders) c. conc. 0.7 mi. in St. Paul between Jackson St. and on Shepard Rd. Chestnut St., Ramsey Co.;

Minn.—Park Constr. Co., 381 37 Ave. N.E., Minneapolis, Minn. LB $246,499. (3 bidders) grav. base, road-mixed bit. surf. 1.1 mi. in Albert Lea, Freeborn Co.;

Minn.—Rajala Constr. Co., Cohasset, Minn. LB $156,448. (5 bidders) grav. base, plant-mixed bit. surf. 1.4 mi. between Nashwauk and 1.5 mi. east, Itasca Co. Bids July 15. CD 7/1.

† **Massman Constr. Co.,** 1221 Baltimore St., Kansas City, Mo. LB $448,392. constr., repair standard dikes, revetment, Missouri River Lower Morgan-Lower Cottier Bends, near Corning, Inv. 25-066-55-154, MISSOURI. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids July 13. CD 7/1.

† **Legnano Electric Corp.,** 37 Wall St., New York, N. Y. LB $278,430. three 20,000, 26,667, 33,333 kva autotransformers, LB $93,910. one spare 20,000, 26,667, 33,333 kva auto-transformer for Granite Falls sub-station, Missouri River Basin Proj. Spec. DS4430, SOUTH DAKOTA. Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver, Colo. Bids July 12. CD 5/25.

† **Cunningham Kiewit Co.,** 4229 Lafayette St., Omaha, Neb., LB $806,966, constr. and repair standard dikes and revetment, Missouri River, Upper Calhoun-Upper Rockford Bends, Inv. 25-066-55-155, near Ft. Calhoun, NEBRASKA. U. S. Eng., 1709 Jackson St., Omaha. Bids July 15. CD 7/7.

▲ **KANSAS**—Kansas Turnpike Auth., P. O. Box 681, Topeka,

KTA—**J. H. & N. M. Monaghan,** P. O. Box 758, Derby, Colo. CA $518,744. eight multiple span bridge rolled beam, continuous steel girders, Sedgwick Co.;

KTA—**Jensen Constr. Co. & Assoc. Co.,** 1901 Easton Blvd., Des Moines, Ia., CA $776,908. nine multiple span bridges rolled beam or steel plate girder, Sedgwick Co. Bids May 20, awarded June 12. CD 5/27, under LB.

▲ **KANSAS**—Kansas Turnpike Auth., P. O. Box 681, Topeka,

KTA—**Maxwell Bridge Co., Inc.,** Columbus, Kan. CA $2,544,538. superstructure of Kansas River Bridge, Douglas Co.;

KTA—**United Contractors,** 1901 Easton Blvd., Des Moines, Iowa. CA $802,740. nine multiple span continuous steel bridges, Butler Co. Bids May 27, awarded June 13. CD 6/2, under LB.

▲ **KANSAS**—Kansas Turnpike Auth., P. O. Box 681, Topeka,

KTA—**List & Clark Constr. Co.,** 730 Railway Exchange Bldg., Kansas City, Mo. CA $955,628. grading drainage 5.05 mi. Butler Co.;

KTA—**J. D. Armstrong,** 1606 Grand St., Ames, Iowa. CA $578,779. grading, drainage 9.43 mi., Butler Co.;

KTA—**S. E. Gustafson Constr. Co.,** Sioux Falls, S. D. CA $555,882. grading, drainage 7.29 mi. Butler Co. Grand total $2,090,289. Bids May 20, awarded June 13. CD 5/27, under LB.

▲ **KANSAS**—Kansas Turnpike Auth., P. O. Box 681, Topeka,

KTA—**Clarkson Constr. Co.,** 4133 Gardner St., Kansas City, Mo. CA $620,443. grading, drainage 1.6 mi. Wyandotte Co.;

KTA—**Sherwood Constr. Co., Inc.,** P. O. Box 994, Wichita, Kan. CA $591,585. grading, drainage 2.39 mi. Wyandotte Co. Bids May 27, awarded June 13.

▲ **KANSAS**—Kansas Turnpike Auth., P. O. Box 681, Topeka,

KTA—**Clarkson Constr. Co.,** 4133 Gardner St., Kansas City, Mo. CA $929,932. grading, drainage 5.98 mi. Shawnee Co.;

KTA—**Grosshans & Petersen, Inc.,** Marysville, Kan. CA $556,650. grading, drainage 4.73 mi. Shawnee Co. Bids June 3, awarded June 13. CD 6/8, under LB.

KANSAS — Kansas Turnpike Auth., P. O. Box 681, Topeka,

Constant Constr. Co., P. O. Box 126, Lawrence, Kan. LB $835,275. three continuous steel beam structures, one continuous welded plate girder structure, Shawnee Co.; LB $94,271. Structure 231 A US75 Interchange bridge over US75, Shawnee Co. Bids July 15. Bids 7/8 rejected. CD 7/1 and 7/8.

▲ **KANSAS**—Kansas Turnpike Auth., P. O. Box 681, Topeka,

KTA—**Peter Kiewit Sons Co.,** Southeast Station, Wichita, Kan. LB $2,298,281. b. conc. 11.08 mi. Sumner Co.;

KTA—**San Ore Constr. Co.,** McPherson, Kan. LB $1,572,801. b. conc. 8 mi. Sumner Co.; LB $1,754,133. b. conc. 9.32 mi. Sumner Co. Bids July 15. CD 7/1.

▲† **McKenzie Constr. Co.,** Box 806, San Antonio, Tex., LB $1,029,700. addnl. airfield pavement, Chase Field Auxiliary Air Station, NOY 84272, BEEVILLE, TEX. Bureau Yards & Docks, Dpt. Navy, Admin. Bldg. 1, Naval Air Station, Corpus Christi, Tex. Bids July 13. CD 6/16.

▲ **Farnsworth & Chambers Co., Inc.,** Box 74, Houston, Tex., CA $3,155,730. Phase 1, Pelican Island Bridge, connecting Galveston Island with Pelican Island, GALVESTON, TEX. City, City Hall, Galveston, Tex. Bids June 13, awarded July 16. CD 6/17, under LB.

† **Lawless & Alford,** Box 600, Austin, Tex., CA $825,705. cadet dormitories, etc., Harlingen Air Force Base, ENG-41-243-55-73, HARLINGEN, TEX. U. S. Eng., Box 1229, Galveston, Tex. Bids June 27. CD 7/6, under LB.

BUILDINGS—LB & CA

▲ **M. H. Anderson Constr. Co.,** 9445 Lyndale Ave., Bloomington, Minn. Owner Builds. $4,500,000. 250 HOUSES, in Wells Wood addn., bounded by South 110 St., Thomas and Penn Aves. South, Minnesota River and in Addn. N. of 110 St., BLOOMINGTON (P.O. MINNEAPOLIS), MINN.

Dean Contg. Co., 6416 Cambridge St., Minneapolis, Minn. CA $574,800. general contract COURT HOUSE, MONTEVIDEO, MINN. Chippewa Co., N. G. Miller, aud., Montevideo, Minn. CD 7/6, under LB.

▲ **Graus Constr. Co.,** Hastings, Minn. CA Approx. $1,000,000. general contract 4 story, bsmnt., 68x242 ft. central OFFICE, SOUTH ST. PAUL, MINN. Farmers Union Central Exchange, Inc., E. A. Syftestad, genl. mgr., 1200 N. Concord St., South St. Paul, Minn. CD 7/8.

B. D. Simon Constr. Co., 802 Broadway, Columbia, Mo. CA Est. $425,000. brick, concrete, stone CHURCH, COLUMBIA, MO. First Baptist Church Bldg. Com., Mrs. C. M. Snead, chn., Columbia, Mo. Bids June 27. CD 7/15, under LB.

Patti Constr. Co., 1340 Admiral Blvd., Kansas City, Mo. CA **$629,000.** OFFICE for International Business Machine Corp., KANSAS CITY, MO. Max Phillippson & Peter F. Pasbjerg, 18 Beaver St., Newark, N. J. Bids June 28. CD 6/9.

West Ames Developer, 406 Aquila Court, Omaha, Neb., Owner Builds **$500,000**, SHOPPING CENTER, 60th and Ames Ave., OMAHA, NEB.

M. K. Eby Constr. Co., 610 N. Main St., Wichita, Kan. LB **$952,180**, general contract ANIMAL INDUSTRIES Bldg. at Kansas State College, MANHATTAN, KAN. State Dpt. Admin., State House, Topeka, Kan. Bids June 15. CD 7/7, under LB.

▲ **Lippert Bros., Inc.**, 2800 N. Santa Fe St., Oklahoma City 5, Okla. CA Est. **$1,000,000.** feed MILL addn., installing automatic material handling machinery, OKLAHOMA CITY, OKLA. Superior Feed Mills, Inc., 2100 S. Robinson St., Oklahoma City, Okla. Awarded July 8. CD 7/7.

▲ **S. D. & C. D. Yarbrough Constr. Co., Inc.**, P.O. Box 851, Austin, Tex., LB, **$2,184,296.** SCHOOL PLANT for Texas School for Deaf, AUSTIN, TEX. State Bd. Control, Capitol Station, Austin, Tex. Bids July 14. CD 6/28.

Hal C. Dyer, Lone Star Gas Bldg., Dallas, Tex., CA, **$565,770.** SCHOOL ADMINISTRATIVE BLDG., DALLAS, TEX. Dallas Independent School Dist., 3700 Ross St., Dallas, Tex. Bids July 12. CD 7/20, under LB.

J. P. Green, Box 1947, Dallas, Tex., LB, **$567,000.** John J. Pershing SCHOOL, DALLAS, TEX. Dallas Independent School Dist., 3700 Ross St., Dallas, Tex. Bids July 12. CD 6/21.

J. M. Tuttle, Jr., 6 Lake Highland Shopping Village, Dallas, Tex., Day Labor, Purchases, **$875,000.** No. 1 SHOPPING CENTER UNIT, DALLAS, TEX. CD 3/11.

Knowlton Constr. Co., 510 Gibraltar Life Bldg., Dallas, Tex., LB, **$499,070.** Alex Sanger Public SCHOOL, DALLAS, TEX. Dallas Independent School Dist., 3700 Ross St., Dallas, Tex. Bids July 12. CD 6/21.

▲ **George Mixon**, 11000 Preston Rd., Dallas, Tex. Force Account. **$445,000.** Sect. 1, SHOPPING CENTER unit; **$775,000.** Sect. 2, SHOPPING CENTER, DALLAS, TEX. CD 11/30/53.

Marshall Constr. Co., 4009 Cedar St., Houston, Tex., CA **$606,982**, Junior High SCHOOL, DICKINSON, TEX. Dickinson Independent School Dist., Dickinson, Tex. CD 3/21.

Laughlin & Silver, 1502 Centerville Rd., Dallas, Tex., Owner Builds, **$358,115.** 27 DWELLINGS; **$366,150**, 22 DWELLINGS, FARMERS BRANCH, TEX. CD 3/16.

▲ **R. G. Farrell Co.**, P. O. Box 137, Odessa, Tex., LB **$1,169,231**, JUNIOR HIGH SCHOOL, in southwest ODESSA, TEX. Ector County Independent School Dist., Odessa, Tex. Bids July 12. CD 6/10.

▲ **Missouri Valley Constructors & Winson Bros.**, Leavenworth, Kan. CA **$2,750,000.** POWER PLANT, HOBBS, N. M. Southwest Public Service Co., Third and Polk Sts., Amarillo, Tex. E. W. Robinson, c/o owner, ch. engr. Bids June 27.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

August 10, 11, California

STREETS AND ROADS

August 10, 11, 17, 18, California

▲ **Calif., Escondido**—BA 8/5—Rincon Del Diablo Municipal Water Dist., 626 W. 5 St., 13 mi. 8- to 24-in. water distr. sys. $1,000,000, Plans deposit $20; 3 m.g. welded steel water tank **$100,000.** Kenneth Q. Volk & Assoc., 7024 Melrose Ave., Los Angeles, engrs.

BUILDINGS—BA

Wash., Kennewick—SCHOOL—BA 8/8—**School District** 17, Kennewick, 40,200 sq. ft. masonry Washington Elementary School, $480,000. Plans deposit $25. J. S. Villesvik, 109 N. 3 St., Yakima, archt. CD 9/27.

Calif., Bishop—SHOP—BA 8/10—State Div. Architecture, P. Wks. Bldg., Sacramento, shop and maintenance for Div. Hys. $400,000. Plans deposit $25.

Calif., San Luis Obispo—SHOP—BA 8/10—State Div. Architecture, 1100 S. Grand St., Los Angeles, shop for Div. Hys. $350,000. Plans deposit $10. CD 1/14.

Calif., Modesto—SCHOOL—BA 8/15—Modesto City Elementary School Dist., Franklin School, new 7 and 8th Grade School, La Loma Tract, $400,000. Plans deposit $50. G. N. Hilburn, 712 17 St., archt.

▲ **Calif., San Jose**—DEPARTMENT STORE—BA 8/15—Sears, Roebuck & Co., 2650 E. Olympic Blvd., Los Angeles, 90,000 sq. ft., department store, $2,500,000. Extended date. Loubet & Glynn, 400 Montgomery St., San Francisco, archts. CD 4/25.

HEAVY CONSTRUCTION—LB & CA

IDAHO—State Hy. Dpt., Boise,

Duffy Reed Constr. Co., Twin Falls, Idaho, CA, **$810,311**, roadway, bit. surf. 383 ft. concrete, steel bridge on 4.786 mi. U. S. 191 and 20 Fremont Co. Bids June 28, awarded July 1. CD 6/15.

▲† **J. W. Bateson Co., Inc.**, 400 Gibraltar Life Bldg., Dallas, Tex., CA, **$3,573,152.** warehouses and supporting facilities, Hill Air Force Base, Utah, No. 04-203-55-521, HILL AIR FORCE BASE, UTAH. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Bids June 17, awarded July 12. CD 6/2, under LB.

▲ **ARIZONA**—State Hy. Dpt., 17 Ave. and Jackson St., Phoenix,

Ariz.—Flickinger Brother, Box 896, Phoenix, Ariz., LB, **$409,014.** new alignment, grading, draining 7.6 mi. Phoenix-Yuma Hy., Maricopa Co.;

Ariz.—Western Constructors, Inc., Box 1604, Phoenix, Ariz., LB, **$495,499.** select material, aggreg. base, bit. road mix 2.9 mi. San Manuel-Tiger Rd. State Rte. 77, Pinal Co.;

Ariz.—Dale F. Payne, 2345 W. Thomas Rd., Phoenix, Ariz., LB **$250,842.** select material, aggreg. base, bit. plant mix seal coat 3.8 mi. Ehrenberg-Wickenburg Hy. U. S. 60-70, Mohave Co. CD 6/17.

▲† **Vega Eng. & Grading Co.**, 1214 4 St., Berkeley, Calif., CA, **$1,554,847**, est. $1,361,734, earthwork, concrete lining, structures for Texas Hill Canal and distr. sys., Gila Proj., Wellton-Mohawk Div., Spec. DC 4411, ARIZONA. Bureau Reclamation, Dpt. Interior, Yuma, Ariz. Bids June 9, awarded July 13. CD 6/20, under LB.

† **Arizona Sand & Rock Co.**, Box 959, Phoenix, Ariz., LB, **$894,400.** strengthen and extend runway, U. S. Naval Air Facility, NOY 86726, Spec. 45837, LITCHFIELD PARK, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids June 27.

▲ **Allis-Chalmers Mfg. Co.**, 1126 S. 70 St., Milwaukee, Wis., CA, **$2,478,180**, 4 main generators and circuit breakers for Mayfield Dam Powerhouse, TACOMA, WASH. City, City Hall, Tacoma, Wash. Bids July 8. CD 6/29.

▲ **OREGON**—State Hy. Comn., Highway Bldg., Salem,

Ore.—Porter W. Yett, 6500 N. E. Ainsworth St., Portland, Ore. CA **$596,233.** grading, paving, 4.69 mi. Tualatin Valley Hy., FAP F-183 (7) Washington Co.;

Ore.—Parker-Schram Co., Builders Exchange Bldg., Portland, Ore. CA **$489,533.** paving 6.46 mi. Pacific Hy., FAP BFI-161 (24), Lane Co.;

Ore.—C. R. O'Neil, Creswell, Ore. CA **$278,900.** grading 3.14 mi. on Pacific Hy., FAP FI-138 (6), Josephine Co.;

Ore.—Rogers Constr. Inc., 17760 N. E. Glisan St., Portland, Ore. CA **$450,665.** grading 6.61 mi., paving 14.27 m. The Dallas-California Hy., FAP F 320 (6), Klamath Co.;

Ore.—Warren Northwest, Inc., 9860 N. E. Hancock St., Portland, Ore. CA **$84,188.** paving 4.54 mi. Orleans-Lebanon Rd., FAP S 119 (2), Linn Co. Grand total $1,899,519. Awarded June 30. CD 1/27/54 and 7/14/53.

Baker-Anderson Co., 12420 S. Bloomfield St., Norwalk, Calif., LB, **$868,759**, est. $500,000. water supply sys., HUNTINGTON BEACH, CALIF. West Orange County Water Bd., City Hall, Huntington Beach, Calif. Bids July 13. CD 7/6.

BUILDINGS—LB & CA

Campion Co., 202 21 St., Ogden, Utah, CA **$624,000.** Junior HIGH SCHOOL, ROY, UTAH. Weber Co. Bd. Educ., Weber High School Bldg., 100 Washington Blvd., Ogden, Utah. Bids July 7, awarded July 13.

▲ **G. H. Buckler Co., Lewis Bldg., Portland, Ore., CA**, Est. $1,000,000, general contract, 1 and 2 story, 25x125 ft., 50x112 ft. and 62x105 ft., hydrogen peroxide PLANT addns., VANCOUVER, WASH. Becco Chemical Div., Food Machinery & Chemical Corp., Vancouver, Wash. Moffatt, Nichol & Taylor, Concord Bldg., Portland, Ore., engrs.

Lodger & Vandegrift, 5531 Venice Blvd., Los Angeles, Calif., CA, **$750,000.** stucco concrete RESTAURANT, Cerritos and Boel Sts., ANAHEIM, CALIF. Jack Wrather Enterprises c/o Pereira & Luckman, archts., 9220 Sunset Blvd., Los Angeles, Calif.

McDonald Brothers, 6060 W. Adams Blvd., Los Angeles, Calif. CA, **$544,800.** 68 frame, stucco DWELLINGS, Ghent, Nearfield and Gaillard Sts. GLENDORA, CALIF. Whissler Development Co., 6060 W. Adams Blvd., Los Angeles, Calif.

▲ **Zaballos Brothers**, 850 Soto St., Hayward, Calif., LB, **$2,093,750**, est. $2,000,000. (8 bidders) Castro Valley HIGH SCHOOL, Castro Valley, HAYWARD, CALIF. Hayward Union Elementary School Dist., 22300 Foothill Blvd., Hayward, Calif. Bids July 13. CD 6/17.

▲ **Newburg Constr. Co.**, 2040 W. Ashland Ave., Chicago, Ill., LB **$19,647,000.** SUPERIOR COURTS BLDG., First and Temple Sts., LOS ANGELES, CALIF. Los Angeles Co., Hall of Records, Los Angeles, Calif. Bids July 19. CD 5/23.

Frank M. Crane, 4 Banker Blvd., Ukiah, Calif. CA **$761,386**, est. $760,000. South Fork HIGH SCHOOL, MIRANDA, CALIF. Southern Humboldt Unified School Dist., Miranda, Calif. Bids July 15. CD 5/13.

Ed Krist, 8640 E. Central Ave., Paramount, Calif., Owner Builds, **$891,000.** 135 frame, stucco DWELLINGS, Gale and Larchwood Aves., PUENTE, CALIF.

Dinwiddie Constr. Co., 620 Market St., San Francisco, Calif., CA, **$650,000.** BANK MODERNIZATION, SAN FRANCISCO, CALIF. Federal Reserve Bank of San Francisco, Sansome and Sacramento Sts., San Francisco, Calif. Harry A. Thomsen, 315 Montgomery St., San Francisco, Calif., archt.

▲ **Culligan Development Co.**, 3700 S. El Camino Real, San Mateo, Calif. Owner Builds. **$2,500,000.** 210 HOME subdivision, SAN MATEO, CALIF. Guy L. Rosebrook, 10510 MacArthur Blvd., Oakland, Calif., archt.

R. E. Payne, Inc., 327 E. Florence Ave., Inglewood, Calif., LB, **$519,500**, est. $500,000 CITY HALL and POLICE STATION, TORRANCE, CALIF. City, City Hall, Torrance, Calif. Bids July 12. CD 7/5.

Pacific Co., 801 Cedar St., Berkeley, Calif., CA **$462,244**, est. $450,000 (6 bidders) Williams High SCHOOL WILLIAMS, CALIF. Williams Unified School Dist., Williams, Calif. Bids July 13. CD 7/5.

CANADA

HEAVY CONSTRUCTION—BA

▲ **Quebec**—CLEARING, etc.—BA 8/10—Canadian National Rys., R. B. Steele, ch. engr., 436 Union Station, Toronto, Ont., clearing, grading, culverts, trestles, and substructures of bridges on first 66 mi. St. Felicien to Chigoubiche Lake Branch line in northern Quebec, $1,250,000. Plans deposit $50. CD 5/17.

▲ **Que., Sherbrooke**—BA 8/15—City, City Hall, dam and powerhouse for City at Bromptonville power site, $2,500,000-$3,000,000. Cote, Lemieux Carignan & Bourque, 144 Vimy St. N., engrs. CD 1/14/54.

BUILDINGS—BA

Ont., Guelph—SCHOOL—BA 8/12—Guelph Bd. Educ., Guelph, E-shaped, centre section 2 story, rest 1 story, school, $852,000. Plans deposit $25. Gordon S. Adamson & Assocs., 52 St. Clair Ave. W., Toronto, archts. CD 2/2/54.

Ont., Kitchener—SCHOOL—BA 8/15—Kitchener-Waterloo Collegiate Bd., Kitchener, high school, $875,000. Barnett & Reider, 154 King St. W., archts. CD 10/26.

HEAVY CONSTRUCTION—LB & CA

ONTARIO—Dpt. Hys., Parliament Bldgs., Toronto,

Wallace A. Mackey Ltd., 50 Church St., Weston, Ont., CA **$560,231** (8 bidders) Contract 55-115, grading, culverts, gran. base 8.5 mi. Hy. No. 17 from White River to C.P.R. crossing, Fort William. Awarded July 13. CD 4/27/44.

ONTARIO and QUEBEC—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., and Quebec Prov. Govt., Quebec City, Que.,

Pentagon Constr. Co. Ltd., 1225 Bishop St., Montreal, Que., CA **$834,549.** interprovincial bridge over Ottawa River, Pembroke, Ont. CD 6/22, under LB.

Gregoire Perrault, Inc., 198 St. Joseph St., Joliette, Que., CA **$800,000.** filtration plant imprvs., JOLIETTE, QUE. City, City Hall, Joliette, Que. Bids June 13. awarded July 12. CD 7/8, under LB.

YUKON TERRITORY — Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.

Baynes-Manning Ltd., 2210 W. 12 St., Vancouver, B. C. LB **$410,311**, hy. bridge over Takhini River on Whitehorse-Carnacks Rd., Whitehorse. A. A. Anderson, c/o owner, ch. engr.

BUILDINGS—LB & CA

Acme Constr. Co. Ltd., 45 Canterbury St., St. John, N. B., CA **$899,824** (3 bidders) LAUNDRY, KITCHEN, underpass, tunnel and roads part of hospital expansion ST. JOHN, N. B. St. John General Hospital Bd., St. John, N. B. Bids June 29, awarded July 11. CD 6/20.

Byers Constr. Co. Ltd., 5675 Western Ave., Montreal, Que., CA **$650,000.** 2 story, steel, brick HIGH SCHOOL CORNER BROOK, NEWFOUNDLAND Bd. School Comrs., Corner Brook, Newfoundland. Bids June 8, awarded July 11. CD 7/12, under LB.

▲ **Ross-Meagher Ltd.**, 9 Echo Dr., Ottawa, Ont., LB **$3,134,379**, 4 story CHEMISTRY, RADIOACTIVE ORES and ADMINISTRATION BLDG., Booth St., OTTAWA, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids June 8. CD 5/24.

Leon M. Adler, 2200 Ward Ave., Ville St. Laurent, Montreal, Que. CA **$500,000**, eight 12-suite 3 story, bsmnt., wood, brick, APARTMENTS, Tasse St., Ville St. Laurent, MONTREAL, QUE. Owner, c/o contractor. Reuben Fisher, 3177 St. Sulpice St., Montreal, Que., archt. Awarded July 8.

Harvey Maron, 6999 Cote des Neiges Rd., Montreal, Que., Owner Builds, **$500,000**, two 49-suite 3 story, bsmnt., wood, brick, APARTMENTS, Decelles Ave., MONTREAL, QUE. Harold Z. Kahn, 6999 Cote des Neiges Rd., and May & Girvan, 10 Weredale Park, Apartment 105, Montreal, Que., archts. CD 7/12.

▲ **Dupont Ltd.**, 11900 Boid de Boulogne Ave., Montreal, Que., CA Est. **$11,000,000.** 750-unit HOUSING DEVELOPMENT, QUEBEC CITY, QUE. Les Enterprises du Parc St. Foy, 130 St. Jean St., Quebec City, Que. Jean-Paul Bayard, 506 St. Catherine St. W., Montreal, Que., archts. J. P. Matte, 30 Bellevue St., Donnacona, Que., engrs. Awarded July 11.

A. Deslauriers & Fils Ltd., 68 Lalemont St., Quebec City, Que., CA **$216,000** (13 bidders) WAREHOUSE, GARAGE and OFFICE, Wolfes Cove, SILLERY, QUE. Imperial Oil Ltd., 2000 Sherbrooke St., Montreal, Que. Bids July 4. CD 6/30.

LATIN AMERICA

HEAVY CONSTRUCTION—BA

Colombia—BA 9/14—Ministry P. Wks., Bogota, 6,250 ft. main span bridge over Magdalena River at Puerto Berrio for Atlantic R. R. Plans deposit $25. Madigan-Hyland South American Corp., 28-04 41 Ave., Long Island City, N. Y., U. S. A., engrs.

AMERICANS ABROAD

BUILDINGS—LB & CA

▲ **Stone & Webster Eng. Corp.**, 90 Broad St., New York 4, N. Y., U. S. A. and **Kellogg International Corp.**, 225 Broadway New York 7, N. Y., U. S. A. CA Total est. **$22,400,000.** petro-chemical PLANT EXPANSION, GRANGEMOUTH, SCOTLAND. British Petroleum Chemicals Ltd., London, England.

(Proposed Advertisements see pp. 88 to 91)

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UNIT PRICES

A PRESTRESSED CONCRETE BRIDGE, 216 feet long, will connect Little Falls pumping station and substations.

Tunnel Bids Decide Potomac Dam, Pump Station Contract

Fifteen bidders competed to build the Little Falls dam and pump station in Montgomery County, Md. The Corps of Engineers awarded contract to James McHugh Construction Co. at $4,473,053. The big difference in bids was on the unit-priced tunnel and outlet items where McHugh was $448,770 below second low. The dam and 500-mgd capacity station will feed Potomac water through an 0.86-mi, 10-ft tunnel conduit to Dalecarlia reservoir for distribution to Washington, D. C.

Consulting engineers are Black & Veatch, Kansas City. Col. Ray Adams is Corps of Engineers Washington District Engineer; Byron Bird is Head Engineer, Chief, Water Supply Div.

The McHugh bid was 11% below the engineer's estimate; 11 bids ranged from 2 to 51% above. The lump sum intake and pump station item involved 55% of McHugh's total bid in contrast to 41% in the engineer's estimate. This item includes the reinforced concrete 143x84x100-ft pump station, intake, two 34.5-kv substations, a 215-ft prestressed concrete bridge and the first 44 ft of discharge tunnel from the pump station. This tunnel portion is lined with reinforced concrete and encased steel pipe.

The rest of the 4,410-ft tunnel is in rock and unreinforced concrete-lined. The contract includes also the 15-ft high, 1,700-ft ogee-type dam, Falls Church pipe line, some reinforced concrete conduit, and a 10-ft diameter, 100-ft riser shaft ending in an outlet structure.

Minimum prevailing wage rates in the area are: laborer $1.90 per hr, electrician $3.40, reinforcing ironworker $3.10, plumber $3.26, plumber laborer $2.00; pipe layer, concrete $2.04, concrete water line $1.85; operators, crane (wheel or track mounted) $3.10, power or tunnel shovel $3.10, tunnel mucking machine $3.10, concrete mixer $2.65, tunnel mechanic $2.65, air compressors $2.45.

The government will furnish unit substations, one 50- and four 100-mgd pumps, one 25- and three 20-ton cranes, water screens, and valves.

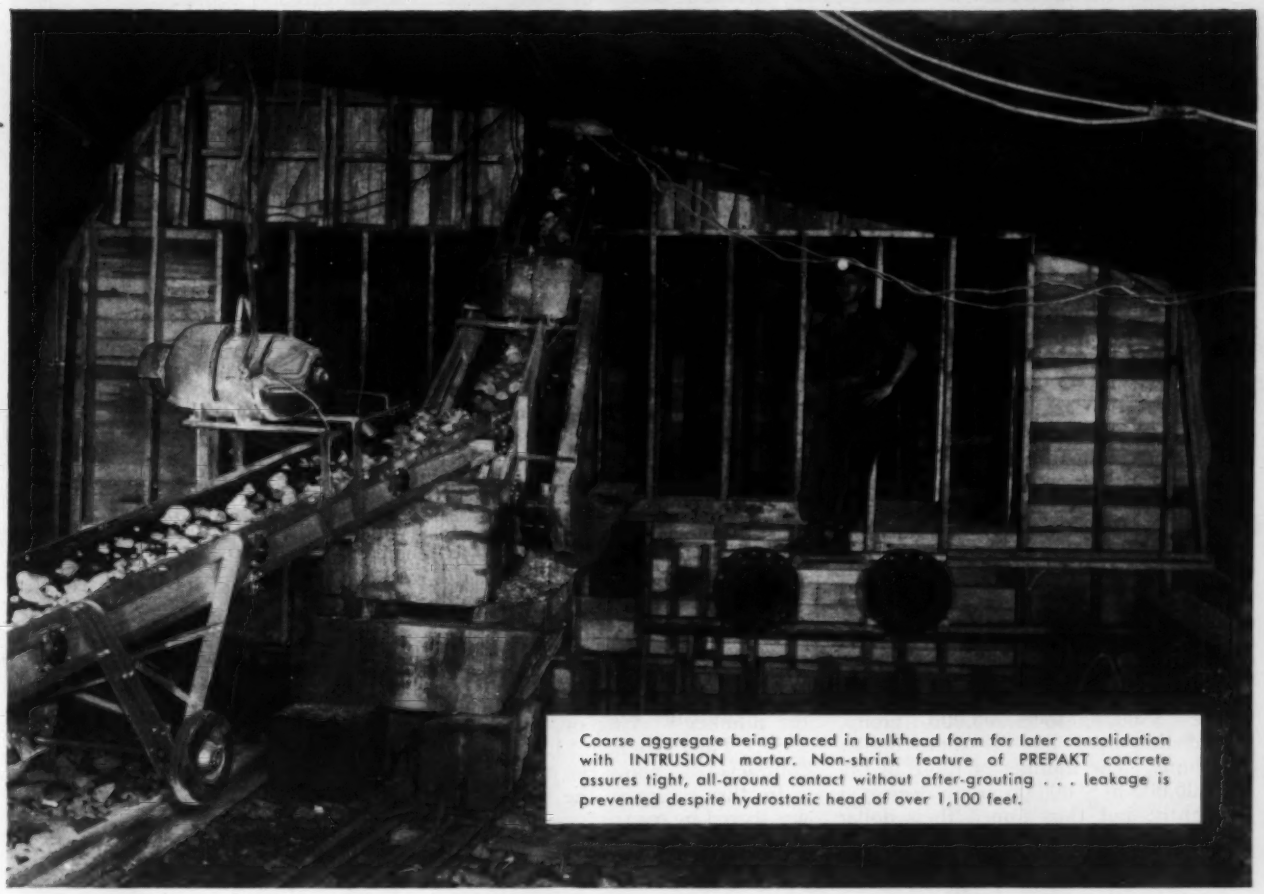
The work is 1 mi from the railhead at one point, 7 mi at another.

Bidders include:

1C	James McHugh Const. Co., Chicago, Ill.	$4,473,053
2	Moore Lopier Corp., New York, N. Y.	4,688,485
15	Square Construction Co., Baltimore, Md.	7,610,500
EE	Corps of Engineers Washington District, Washington, D. C.	5,036,795

Completion: 900 calendar days, liq damages $500/day

Bids: 5-19-55 Items	Unit	Quantity	Unit Prices 1C	2
Intake & pump station:				
Incl substations, bridge, discharge conduit, retaing walls, venturi tube, MH, pres MH, site clearg & gr, cofferdams, utilities, const & access rds, f&i equip	ls	.....	$2,477,267	$2,802,000
Foundation drilling & grouting intake, pump station dam:				
Drill grt holes	lf	8,000	3.00	3.00
exploratory holes	lf	1,000	3.00	3.00
Portland cement in grt.	bbl	2,000	6.11	4.50
Place grout	cf	8,000	2.50	2.00
Grout hole connections	ea	1,000	12.00	8.00
Dam & Falls Church pipeline:				
Cofferdams	ls	.....	250,000	150,000
Exc, dam, Va. shore anch, pipeline, access MH's	cy	9,000	8.77	10.00
Conc, dam Va. shore anch, & pipe encasement	cy	15,400	21.70	10.00
Reinforcing bars	lb	32,000	0.12	0.10
Reinf concrete pipe, 36"	lf	1,907	31.91	20.00
Access MH structs, Falls Ch line except exc, cmt	ls	.....	6,840	5,000
Discharge conduit from East face substation retaining wall, riser shaft, outlet structure:				
Exc, discharge conduit: open-cut	cy	650	7.18	2.00
tunnel	cy	23,500	21.34	35.00
Struct stl supports, tunnel & shaft	lb	18,000	0.28	0.50
Stl rock bolts, head plates, tunn support	lb	12,500	1.04	0.50
Tunnel grouting:				
Drill holes, grout	lf	500	3.76	4. 0
exploratory	lf	500	3.76	3.00
Pipe	lb	4,600	0.56	0.50
Portland cement in grout	bbl	1,250	6.11	4.50
Mineral filler in grout	cf	2,000	0.20	0.30
Sand in grout	cf	9,000	0.13	0.10
Fluidifier in grout	lb	5,000	0.20	0.40
Place grt, contact grtg	cf	19,000	1.65	1.30
Place grt, consolid grt	cf	1,000	2.50	1.50
Grt hole connections	ea	700	13.20	10.00
Conc, open-cut & tunnel sections	cy	10,000	16.80	35.00
Conc, excess, tunnel	cy	400	10.00	10.00
Reinf bars	lb	8,000	0.13	0.10
Shaft trans section & outlet struct incl piers, except cmt & str stl supports	ls	.....	89,702	50,000
RCP 120" or RC cond 120"	lf	183	28.43	200.00
Portland cement for conc.:				
Pump station, dam tunnel	bbl	80,600	5.58	4.25

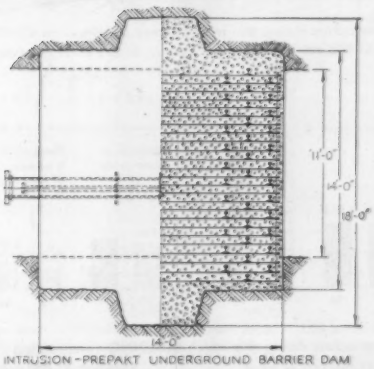


Coarse aggregate being placed in bulkhead form for later consolidation with INTRUSION mortar. Non-shrink feature of PREPAKT concrete assures tight, all-around contact without after-grouting . . . leakage is prevented despite hydrostatic head of over 1,100 feet.

Prepakt plugs off underground water

Underground flooding from abandoned drifts has been halted by seven mine plugs of high-strength PREPAKT concrete at the Wenonah Mines of Tennessee Coal & Iron Division, U. S. Steel Corporation. Made "in the form" by economical consolidation of pre-placed aggregate with INTRUSION mortar, these plugs are a leak-proof seal against ground water with hydrostatic heads ranging from 855 to 1,150 feet.

PREPAKT concrete has no setting shrinkage and a low temperature rise so that a tight, permanent bond with the complete tunnel periphery results. Measuring 28′ wide x 14′ high x 14′ thick, each unit is keyed and reinforced. Access holes which can be quickly closed have been left where desired. This project is another example of PREPAKT's ease and economy of operation. Why not investigate INTRUSION-PREPAKT methods and materials for your next concrete job?



Cross-section of 200-cu. yd. Intrusion-Prepakt mine plug which is keyed to drift surface and reinforced with salvaged car rails.

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Million-Dollar Contractors Drop Back in '54

The million-dollar and up contractors increased in numbers last year but still took on a smaller share of total new business.

That's the first conclusion you can draw from ENR's annual survey of contractors who took on $100,000 or more of new business last year.

The count shows a new record in number of firms—7,833. It shows a record number of new projects—17,493. But dollar volume of projects was down 9%.

The work was spread more evenly among different groups of contractors. For instance, the number who signed up $1 million or more in business last year increased 3%, and this group took on 9% more projects. But dollar volume of these projects decreased 12% (tables below). By contrast, there were 5% more contractors in the $500,000-to-$1,000,000 group, and they took on 4% more dolllar volume. The number of those in the $100,000-to-$500,000 group decreased slightly, but they upped their dollar volume 2%. It's worth noting that the million-dollar-and-up firms outnumbered contractors in the middle group, and that they do nearly four times as much business as the other two groups put together.

• **Nonbuilding field**—The trend of big contractors losing business to smaller operators was particularly marked in the nonbuilding field. While dollar volume done by million-dollar contractors dropped off 12%, contractors in the middle group took on 12% more business, and those in the $100,000-to-$500,000 group gained 5% more business.

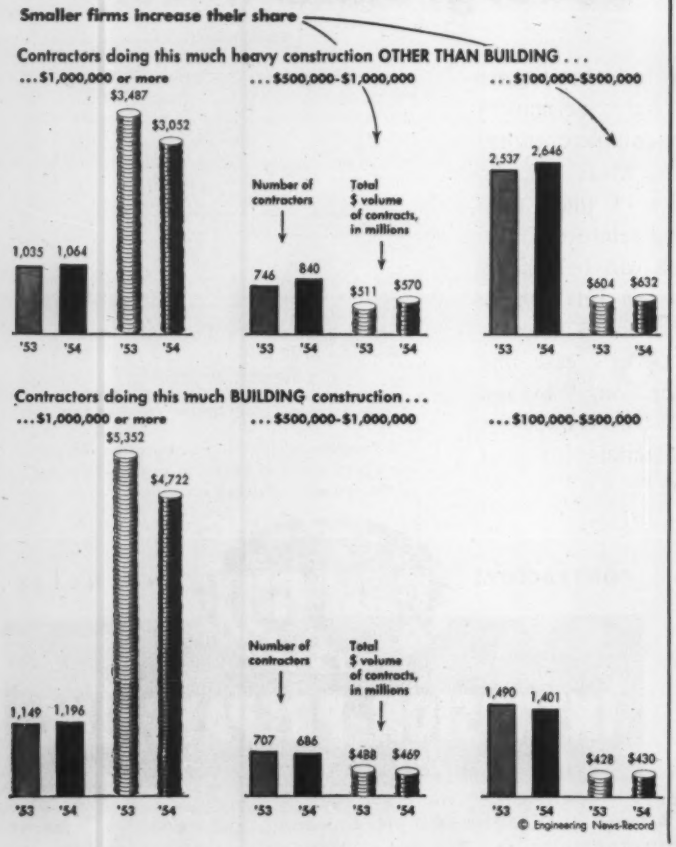
• **Highway contractors**—In the nonbuilding field, the gain in the number of firms doing highway work was particularly noticeable last year. Nearly half of all nonbuilding firms took on highway contracts, a gain of 10% over the number working on highways in 1953. They handled $1.7 billion in contracts—7% above the previous year.

In this category, the biggest gain was scored by contractors in the $500,000-to-$1,000,000 class. There were 20% more firms, and they did 19% more business. The number in the $100,000-to-$500,000 class increased 10%, but they did 11% less business. As in all categories of nonbuilding and of building construction, million-dollar contractors continued to do most highway work. The total was nearly $1.2 billion, slightly above 1953.

• **Other nonbuilding contractors**—There were big increases last year in the number of contractors doing waterworks, earthwork & waterways, and unclassified construction. In waterworks, the big gain came in the two larger contractor groups. In earthwork & waterways, the medium-sized contractors and those in the $100,000-to-$500,000 group increased the most. In unclassified work, the big contractors and the medium-size group again came out ahead.

• **Building contractors**—The total number of contractors in this field declined 2% last year, due entirely to a 15% decline in the number of firms taking on new industrial work. In 1952, there had been a 17% jump in

Competition Spreads Work in '54



New Business in 1954:

Contracts doing $100,000 or more in total contracts took on this much

Type of Work	Number of . . . Contractors 1954	Contractors % Change from '53	Projects 1954	Projects % Change from '53	$ Volume (millions) 1954	$ Volume % Change from '53
Nonbuilding						
Waterworks	683	+14	1,086	+11	$225	+0.9
Sewerage	851	+ 4	1,382	+ 8	376	− 4
Bridges	681	+ 2	1,030	+ 1	448	−34
Streets & roads	2,243	+10	5,519	+15	1,746	+ 7
Earthwork & waterways	522	+14	713	+ 9	303	−19
Airports	605	− 7	837	− 7	530	+ 7
Unclassified	790	+12	935	+ 2	626	−22
Federal (incl. in above)	1,104	....	1,540	....	825	....e
Total	4,550	+ 5	11,502	+ 9	4,254	− 8
Building						
Industrial buildings	1,135	−15	1,716	−20	1,887	−27
Mass housing, commercial and public buildings	2,638	+ 5	4,275	+11	3,734	+ 2
Federal (incl. in above)	198	....	174	....	155	....
Total	3,283	− 2	5,991	+0.1	5,621	−10
All construction	7,833	+ 2	17,493	+ 6	9,875	− 9

the number of contractors taking on industrial work. Dollar volume of industrial work was down even more sharply –by 27%.

• **Government figures**–The Bureau of the Census and the Bureau of Old-Age and Survivors Insurance have recently published data on the total number of construction contractors. This, the latest information available, covers the first quarter of 1953.

At that time there were 263,156 contractors. General contractors doing nonbuilding work totaled 18,983, and general building contractors numbered 79,461. There were 164,712 special trade contractors.

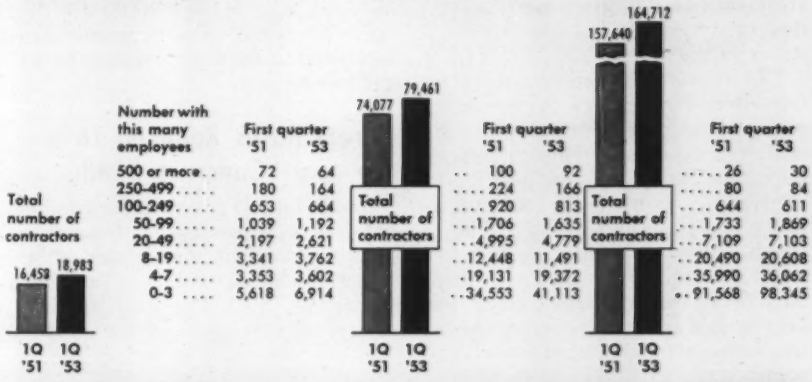
• **Median is small**–The median number of employees in nonbuilding firms was from four to seven, while the median for general building and special-trade firms contractors was less than four. This shows how small the great bulk of contracting firms are, and explains why the total is so much larger than the figures reported by ENR on firms taking on $100,000 or more in new business last year.

Of the nonbuilding contractors, 45% had eight or more employees in the first quarter of 1953, and 25%–about 4,700–had 20 or more. This last group roughly corresponds to the 4,318 nonbuilding contractors listed by ENR in 1953.

Only about 9% of general building contractors had 20 employees or more. There were 7,415 firms in this group.

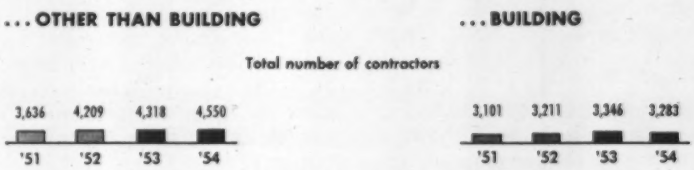
How Big Are Contractors?

Size of contractors by number of employees – OASI Bu Census data



Size of contractors by $ volume of new business – as reported by ENR

Contractors taking on $100,000 or more in contracts per year in . . .



Number doing this much new business

'51	'52	'53	'54		'51	'52	'53	'54
851	985	1,035	1,064	. . . . $1,000,000 or more	1,057	1,127	1,149	1,196
653	760	746	840	. . . . $500,000-$1,000,000 . . .	653	688	707	686
2,132	2,464	2,537	2,646	. . . . $100,000-$500,000 . . .	1,391	1,396	1,490	1,401

Contractor New Business in 1954–by Size of Firm

(As reported by Construction Daily and Engineering News-Record)

Total '54 volume of all types →	1. $1,000,000 or more						2. $500,000–$1,000,000						3. $100,000–$500,000					
	Number of . . .				$ Volume (millions)		Number of . . .				$ Volume (millions)		Number of . . .				$ Volume (millions)	
	Contractors		Projects				Contractors		Projects				Contractors		Projects			
Type of Work	1954	% Change from '53	1954	% Change from '53	1954	% Change from '53	1954	% Change from '53	1954	% Change from '53	1954	% Change from '53	1954	% Change from '53	1954	% Change from '53	1954	% Change from '53
Nonbuilding																		
Waterworks	211	+26	420	+20	$138	+ 3	115	+25	194	+18	$34	+ 3	357	+ 5	472	+ 3	$53	– 5
Sewerage	242	+13	485	+24	224	– 3	134	–16	261	–13	60	–21	475	+ 7	636	+ 9	92	+11
Bridges	284	– 5	447	– 8	344	–41	140	+32	226	+28	53	+20	257	– 3	357	+ 1	51	– 6
Streets & roads	585	+ 4	2,393	+16	1,196	+ 3	460	+20	1,252	+23	277	+19	1,198	+10	1,874	+ 9	273	–11
Earthwork & waterways	205	+ 8	281	+ 1	234	–26	83	+22	123	+17	30	–25	234	+17	309	+15	39	+15
Airports	250	–12	399	– 7	429	+11	118	+22	175	+18	56	+10	237	–12	263	–19	45	–22
Unclassified	257	+11	327	– 1	487	–28	136	+25	175	+13	60	+20	397	+ 8	433	0	79	+ 8
Federal (incl. in above)	422	....	691	....	637	....	213	....	324	....	100	....	469	....	525	....	88	....
Total	1,064	+ 3	4,752	+10	3,052	–12	840	+13	2,406	+16	570	+12	2,646	+ 4	4,344	+ 5	632	+ 5
Building																		
Industrial buildings	480	– 4	910	–13	1,721	–28	162	–27	234	–34	66	–31	493	–19	572	–22	100	–13
Mass housing, commercial and public buildings	1,061	+ 7	2,488	+17	3,001	+ 1	625	+ 5	812	+ 3	403	+ 3	952	+ 4	975	+4	330	+ 5
Federal (incl. in above)	116	....	100	....	133	....	30	....	25	....	10	....	52	....	49	....	12	....
Total	1,196	+ 4	3,398	+ 7	4,722	–12	686	– 3	1,046	– 9	469	– 4	1,401	– 6	1,547	– 7	430	+0.5
All construction	2,260	+ 3	8,150	+ 9	7,774	–12	1,526	+ 5	3,452	+ 7	1,039	+ 4	4,047	–0.5	5,891	+ 1	1,063	+ 2

Revised Construction Daily Provides Two-Way Service

ENR's sister publication, CONSTRUCTION DAILY, has recently revised its format to offer more service to construction men.

CD provides a two-way daily information service: (1) A newsletter giving advance news on work moving into engineers' and architects' offices, important bid dates, top jobs, costs, availability of materials and equipment, and big events which will affect construction. (2) A daily reports section averaging 300 classified news items on proposed work, on bids asked, low bidders and contracts, naming the active owners, architects, engineers, and contractors.

• **Exclusives**—Here are some CONSTRUCTION DAILY exclusives:

The biggest continuous reporting service on contracts awarded in all 48 states—about four times the number of reports carried in ENR. Each month, the dollar volume of this work is summarized by types of work in each state. CD reports future construction plans of private industry and government in the backlog of proposed construction in each state, by type of work.

Each week, it publishes new construction and building cost indexes for each of 20 cities, plus the 20-cities average. The materials prices and wages which are the components of this index are shown for each city.

And each month CD publishes a roundup of trends, movement of proposed work, data on bookings, production and shipments of materials and equipment, construction financing, and employment trends.

Two Big Bond Issues Sold To Finance Construction

As interest rates tightened in the bond market, the Public Housing Administration was able to sell $101 million of bonds of various local housing authorities last week at an average interest cost of 2.55%. These bonds are not only tax-exempt, but have what is in effect a federal guarantee. A somewhat larger offering last April was sold at an average interest cost of 2.42%.

Ohio also sold $52 million worth of highway construction bonds at a net interest cost of 2.31%. This is the second block sold by Ohio out of a $500-million bond issue approved by the voters in 1953. It is intended to provide half the money for a $1-billion road program which will continue till 1962. The rest of the money is scheduled to come from current state funds, federal aid, and local levies. The bond issue will be paid off from 1 cent of the 5 cents per gallon state gas tax, plus an axle-mile truck tax, and license fees. The yield from these sources is estimated at from $35 million to $40 million annually.

Surety Rates Reduced 18% On Most Contract Bonds

In the biggest rate slash for a decade, the Surety Association of America cut rates this week on major types of construction contract bonds by an overall average of 18%. The association estimated that about 75% of total bonded construction would be affected.

The types of bonds included in the revision are: Construction Class B; Construction Class A; Bridges; and Highways.

The association was unwilling to give out any reason for the widespread cut. It is known, however, that the decision was made after a long study by surety experts. A likely reason: To meet increasing competition of surety companies not belonging to the association.

Business Briefs . . .

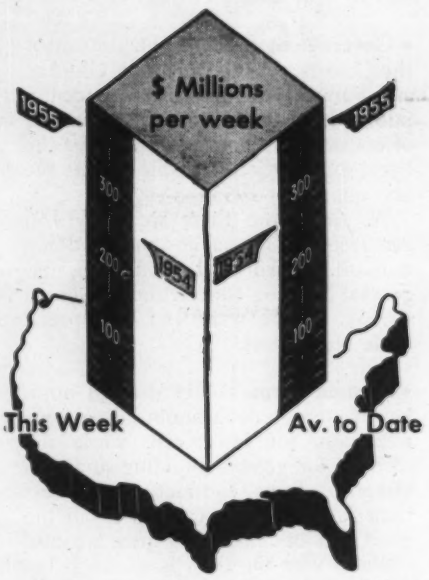
• **Bidders on atom reactor**—Foster-Wheeler Corp., of New York is apparent low lump-sum bidder on a contract to build a test reactor for AEC at Livermore Research Laboratory in California. Other bidders were Avco Mfg. Co., and Vitro Corp. of America; Burns & Rowe, New York; Fluor Corp., Los Angeles; Kaiser Engineers, Oakland, Calif. and General Electric Co.; North American Aviation, Inc., of Downey Calif. The last-named firm built a reactor that is now operating at Livermore.

• **Top U. S. toll roads** show good traffic results. Traffic on the Jersey Turnpike increased 9.6% in the first half of this year over the same 1954 period, while revenues were up 5.8%. Truck traffic alone increased 16.1%. June results for the New York State Thruway, which is not quite finished, show a 17% gain in revenues over May. Passenger traffic paying the full toll climbed 18%, while truck traffic rose 15.6%.

• **Vacancy rate** in Manhattan loft buildings is rising, according to a survey just released by the Real Estate Board of New York. The rate was 2.5% this spring, compared to 1.4% last year.

Activity This Week

As reported to ENR
(In millions of dollars)



Amount of contracts let

By Ownership	This Week	Cumulative 30 wks 1955	1954	% chge
Federal	$14.0	$1,105.4	$740.6	+49
State and municipal	126.3	3,070.8	2,773.1	+11
Total public	140.3	4,176.2	3,513.7	+19
Total private	225.9	6,932.1	4,565.0	+52
U. S. Total	$366.2	$11,108.3	$8,078.7	+38
Contracts by type of work				
Waterworks	$6.2	$153.7	$127.4	+21
Sewerage	3.5	223.0	223.1	0
Bridges	14.2	276.9	267.9	+3
Highways	58.2	1,250.3	1,035.6	+21
Earthwork, waterways	6.6	318.7	164.9	+93
Buildings:				
Public, excl. hsg.	40.4	1,022.3	1,038.2	−2
Public housg.	1.2	164.9	141.2	+17
Private housg.	106.8	3,819.7	2,558.6	+49
Commercial	22.3	1,035.8	720.5	+44
Industrial	66.2	1,601.0	1,051.9	+52
Unclassified	40.6	1,242.0	749.4	+66
U. S. Total	$366.2	$11,108.3	$8,078.7	+38

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

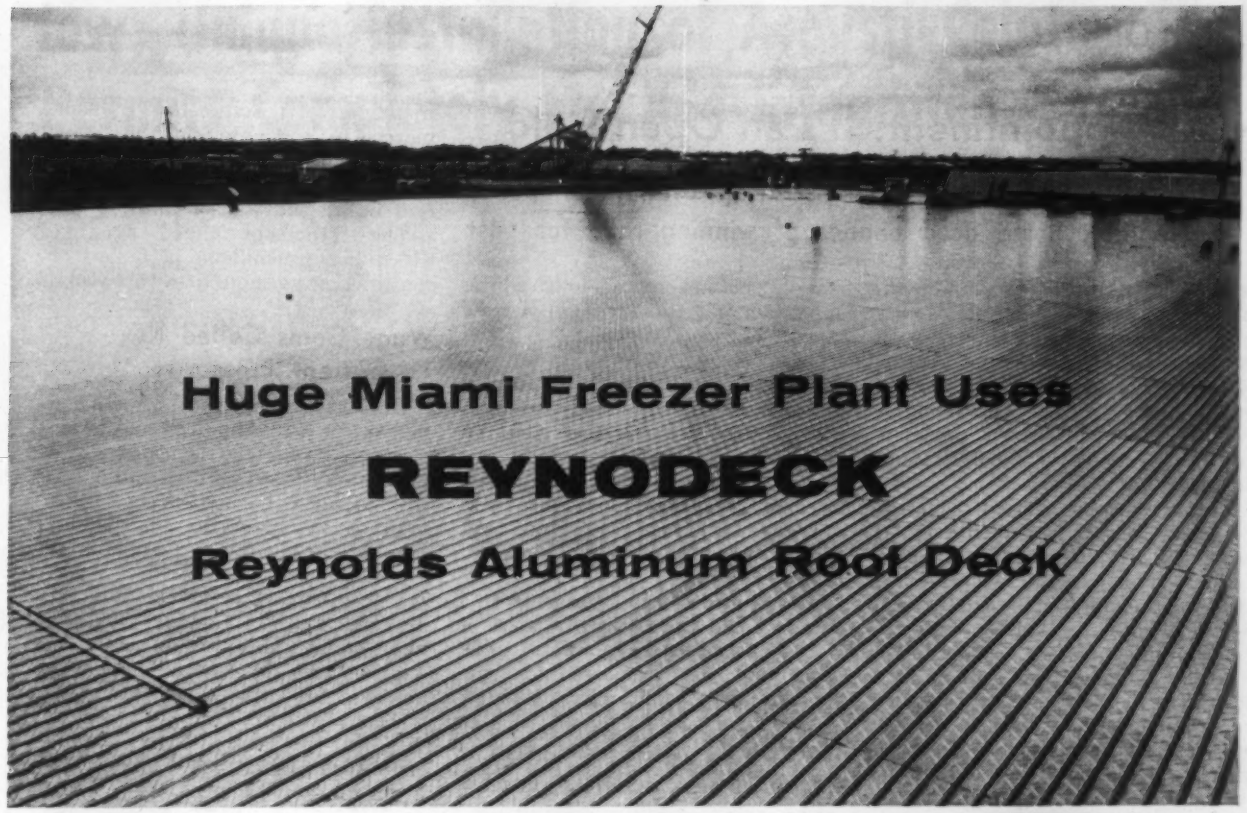
New capital for construction

(millions of dollars)	This Week	Cumulative 29 wks 1955	1954	% Chge '54-'55
Corporate securities	$80.3	$1,922.4		+8
State and municipal:				
All except housing	60.9	2,440.9		−25
Housing	...	63.2		−9
Federal loans	0.2	78.7		+6
Federal aid	...	741.5		+18
Total nonfederal	141.4	5,317.7		−10
Federal appropriations:				
In U. S.	0.4	456.4		−59
Outside U. S.	2.0	43.9		+55
Total new capital	$143.8	$5,818.0		−17

ENR cost and volume indexes, 1955

		Base years = 100 1913	1926	1949
Construction cost	6/21	671.81	322.94	140.83
	6/30†	660.09	317.31	138.39
Building cost	6/21	477.47	258.11	135.73
	6/30†	467.52	252.73	132.90
Volume	June	633	257	183
	May	731	297	211

† Official monthly index for July



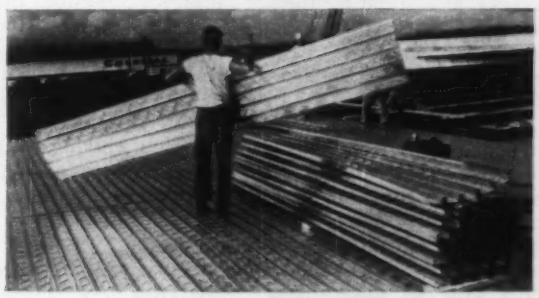
That's a 45,000 sq. ft. area of roof deck...all Reynolds Aluminum. And the special requirements of a freezer plant only emphasize the advantages that make aluminum best for industrial roof deck generally... freedom from maintenance (no rust, high corrosion resistance); radiant heat reflectivity that adds insulation value; high light reflectivity inside; lighter weight with ample strength.

Arthur J. Schlossman, president of Zero Food Storage, Inc., says: "We, and Spector & Sons, the General Contractors, are all very pleased with your product, and the erection done by W. J. Kane & Sons, Inc. Our architect, Tony Sherman, Miami, made wise decisions in specifying your aluminum roof deck and aluminum acoustical ceiling in the offices. They will pay for themselves over a short span of years."

A complete installation service is available. For name of nearest franchised jobber-erector, call the Reynolds office listed under "Building Materials" in classified phone books of principal cities. Or write to Reynolds Metals Company, Building Products Division, 2009 S. Ninth St., Louisville 1, Kentucky.

Specifications:

Thickness:	.032" (No. 20 B & S Ga.) and .036" (No. 19 B & S Ga.).
Width:	Over-all 25", nominal coverage 24".
Ribs:	1.75" deep, spaced 4.8" on center.
Weight:	.81 lbs./sq. ft. for .032". .91 lbs./sq. ft. for .036".



REYNOLDS ALUMINUM
BUILDING PRODUCTS

NLRB Appointment: It's an Open Field

Conflicts within the Administration over labor policy give dark horse good chance of winning race for post

Conflict within the Eisenhower Administration over labor policy has broken out again. Once more, liberal and conservative elements—represented by Labor Secretary James P. Mitchell and Commerce Secretary Sinclair Weeks—are at odds over a candidate for the National Labor Relations Board.

The two factions are out to fill the job being vacated next month by retiring NLRB Chairman Guy L. Farmer. The successor will take the fifth position on the board between two Democratic holdovers and two Eisenhower appointees.

At the moment the issue is at a draw. It's the same situation that led to a Mitchell-Weeks tangle over the previous board appointee and resulted in an "unknown"—South Dakota Judge Boyd Leedom—getting the last vacancy.

• **Candidates**—These are the candidates and their prospects, to date:

• Stuart Rothman—solicitor of the Labor Dept. under Mitchell. A liberal Republican, Rothman is opposed by Weeks and various business associations—a stand that may knock him out of the running. Rothman would need support of the Senate Labor Committee, which must pass on his selection, but his previous testimony on the minimum wage bill has made him lose favor with some members.

• Michael J. Bernstein—counsel to Republican members of the Senate Labor Committee. A candidate of Weeks, he lost out for the last vacancy when Secretary Mitchell made a direct appeal to President Eisenhower to turn him down. His chances are less than good.

• Dwyer Shugrue—New York attorney and former aide to New York Senator Irving Ives. Ives backed Shugrue last time, for the Leedom job, but lost out. Recently, another Ives candidate was placed in a top government job, making two in a row for the New York Senator unlikely.

• Edward McCabe—counsel for the House Labor Committee. He's being backed by GOP and some Democratic members of the House committee. McCabe, who was one-time clerk to the House Labor Committee that watched over the Taft-Hartley Act in its first year of operation, appears to have little opposition but also little enthusiastic support outside the House.

• **A dark horse?**—It's quite possible that none of the current front-runners will get the job and it may go to an outsider as in Leedom's case. But the pressure will be on the White House to come up with an appointment this session since Farmer leaves Aug. 24—and the board would be undermanned until next year.

The controversial decisions of the current board and the critical areas of labor-management relations still to be ironed out, have combined to make the pending appointment significant.

Northwest Ironworkers Win Wage Hikes as Strike Ends

A provisional contract with the Associated General Contractors has ended a two weeks' strike of 900 ironworkers in eastern Washington and northern Idaho.

Substantially meeting the union's wage demands, the new agreement grants a 12-cent increase to structural workers and gives a 7-cent boost to reinforcing iron rod workers, retroactive to June 27. Both groups will receive another 10 cents next Jan. 1.

Commencing Oct. 1, employers will contribute 10 cents an hour to the health and welfare fund. Travel pay is set at $1.50 for the 15- to 25-mi area and ranges up to $6 for distances exceeding 55 mi.

While the contractors agreed to wage demands, they left to later negotiation what Federal Mediator Louis Ziman called "basic contract matters". Still to be decided are details of the health and welfare fund, general working rules, up-grading of classifications, extra pay for blueprint reading, and transfers from one local to another.

New Contract for Plumbers

Plumbers and steamfitters in the Wilmington, Del., area have accepted a two-year contract with wage increases of 15 cents each year.

The new agreement boosts the journeymen's scale from $3.10 to $3.25 an hour and retains existing fringe benefits, estimated by employers to cost 23 cents an hour. Included in these are a one-week paid vacation, six paid holidays, and a 10-cent health and welfare contribution.

The settlement ended a strike which tied up millions of dollars of construction for more than two weeks.

Wage Gains Called Key To Current Prosperity

Real key to current prosperity is the sharp rise in purchasing power resulting from wage increases which the unions have won, according to AFL president George Meany.

In an article in the Philadelphia Inquirer, he attributes two-thirds of the 1955 record increase in personal expenditures to this source. "For the next six months," he adds, "we look forward to continued increases in wages. . . . This expectation is supported by the fact that productivity is steadily increasing."

Noting that "unemployment is still 50% higher than it was in 1953," Meany stressed the necessity of "public initiative" to stimulate purchasing power. Among the steps that should be taken in that direction, he said, are construction of a national highway system, and federal leadership in school and hospital construction.

Labor Briefs . . .

• **Tool allowance**—The Alaska Council of Carpenters has won for the first time an allowance for replacement of carpenter tools. The provision is included in its new two-year contract with AGC, which also grants a 7-cent wage increase, retroactive to April 15, with another 3 cents Aug. 1 and 10 cents more next Mar. 1.

• **Unemployment compensation**—The Attorney Generals of Michigan and Connecticut have ruled that workers in their states may receive unemployment compensation benefits while receiving GAW payments under the new Ford and General Motors contracts. UAW hailed the rulings as paving the way for integration of the two systems in the majority of states without altering present laws.

• **Prevailing wages**—Baltimore's city ordinance establishing minimum wage scales for work done for the city is under attack. Two open shop contractors—Colwill Construction Co. and Roland Electric Co.—have asked the Circuit Court to rule on its legality.

New, Unique Installation of Acousti-Celotex Tile Permits Completely Flexible Integrated* System

Sinclair Oil Building, 155 North Wacker Drive, Chicago
Owner: John W. Galbreath & Co., Inc. • Architect: Holabird & Root & Burgee
Builder: Turner Construction Company • Acoustical Contractor: James L. Lyon Co.

Sinclair Oil's New Chicago Headquarters... Sound Conditioned, Light Conditioned, Air Conditioned

Throughout the 200,000 square feet of this outstanding new Chicago office building, the use of Acousti-Celotex Mineral Tile on the Acousti-Line® Suspension system, achieves three purposes: Besides completely sound conditioning every office on every floor, this efficient system allows complete flexibility of lighting fixtures and air conditioning diffusers.

Light fixtures may be taken out or relocated, direction of lighting changed. Air diffusers and ducts, in fact *any* ceiling element can be rearranged with minimum labor to suit the needs of the occupants. Because of exclusive Acousti-Line® Suspension, easy removal of tile at any point in the ceiling provides immediate accessibility to above-ceiling space for servicing utilities.

Improved Employee Efficiency—A ceiling of Acousti-Celotex Tile checks routine noise of machines and conversation in general and private offices, corridors and conference rooms. The result is reduced error incidence, lessened overtime, an overall increase in productivity.

Easily Maintained—Once installed, Acousti-Celotex Tile requires no special maintenance thereafter. It is of high sound-absorption value, has a surface of unusual beauty. And it can be washed *repeatedly* and painted *repeatedly* without affecting its sound absorbing properties.

* Acousti-Celotex incombustible Perforated Mineral Tile is installed on the Celotex Acousti-Line® Metal Suspension Ceiling, where tiles, light fixtures, and air diffusers become interchangeable parts of the ceiling. When a new arrangement is desired, units can be quickly, easily, *economically* relocated.

TRADE MARK

ACOUSTI-CELOTEX
REGISTERED U. S. PAT. OFF.
Sound Conditioning

Products for Every Sound Conditioning Problem

FOR FULL DETAILS on the complete line of Acousti-Celotex products, please write to The Celotex Corporation, Dept. Z-75, 120 S. La Salle Street, Chicago 3, Illinois.

THE CELOTEX CORPORATION, 120 SOUTH LA SALLE STREET, CHICAGO 3, ILLINOIS
IN CANADA: DOMINION SOUND EQUIPMENTS, LTD., MONTREAL, QUEBEC

OFFICIAL PROPOSALS

Bids: August 18, 1955

Construction of the Delaware River Turnpike Bridge

PENNSYLVANIA TURNPIKE COMMISSION
Harrisburg, Pennsylvania
NEW JERSEY TURNPIKE AUTHORITY
New Brunswick, New Jersey
NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission and the New Jersey Turnpike Authority, acting in conjunction as specified in the Proposal Documents, until 11:00 A.M., Eastern Daylight Saving Time, August 18, 1955, for Contract PN5 in connection with the construction of the Delaware River Turnpike Bridge planned as a connection between the Pennsylvania and New Jersey Turnpikes. This Contract comprises the relocation of approximately 1,000 feet of River Road in the vicinity of Pier 21, including grading, paving and drainage.

The principal items of work include:

Roadway Excavation, Earth ..... 870 Cubic yards
4" Macadam Base Course. 2270 Square yards
4" Modified Penetration Macadam, Intermediate Course .. 2270 Square yards
Bituminous Binder, Modified Penetration Macadam ..... 4000 Gallons
Pavement Type FA-BC-1 ..... 250 Tons
6" Gravel Shoulders ..... 2270 Square yards

All of the work is located in the Township of Burlington, Burlington County, New Jersey.

Proposals will be received at the Administration Building of the New Jersey Turnpike Authority, New Brunswick, New Jersey, and immediately after the hour for closing will be publicly opened and read aloud.

Proposal Documents may be examined during office hours after August 2, 1955, at the office of the Pennsylvania Turnpike Commission, 11 North Fourth Street, Harrisburg, Pennsylvania, or at the office of the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey. Proposal Documents will be furnished on application to the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, upon payment of Five Dollars ($5.00) for each set. No refund will be made.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance, Secretary-Treasurer
NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman
July 28, 1955

Bids: August 17, 1955

Indiana Toll Road Commission 309 W. Washington Street Old Trails Building Indianapolis, Indiana

NOTICE TO BIDDERS
Contract No. C-8.

Sealed proposals will be received by the Indiana Toll Road Commission at or before 10:00 A.M., Central Standard Time, August 17, 1955 for the performance of the contract enumerated above.

The grading, drainage, structures and paving of approximately 1.9 miles in construction section C-8 of the Indiana East West Toll Road beginning at a point about 838 feet west of the centerline of Ralston Street at Toll Road Centerline Station 784 plus 00 and extending eastwardly a distance of approximately 10,030 feet to a point about 4,432 feet west of the centerline of Buchanan Street all in the City of Gary, Lake County, Indiana. The approximate quantities of the major items of construction are as follows:

Common Excavation ...	2,500	cu. yds.
Peat Excavation	273,000	cu. yds.
Borrow	604,000	cu. yds.
Special Fill for Peat Deposits	314,000	cu. yds.
Waterway Excavation..	90,000	cu. yds.
10" Reinforced Concrete Pavement	34,000	sq. yds.
Hot Asphalt Concrete Surface Course	350	tons
2" Asphaltic Concrete wearing surface for structure	27,000	sq. yds.
Culvert Pipes and Underdrains	13,250	lin. ft.
Steel Piling	13,000	lin. ft.
Concrete Piling	11,100	lin. ft.
Concrete for Structures	20,400	cu. yds.
Reinforcing Steel	8,327,000	lbs.
Fabricated Structural Steel	7,550,000	lbs.
Metal Handrail	14,700	lin. ft.

Copies of the Plans, Specifications and Proposal forms for said Contract are available for public inspection or purchase at the office of the Chief Engineer, Indiana Toll Road Commission, 309 W. Washington Street, Indianapolis, Indiana. These documents may be purchased from said chief engineer for the following sums, per set, which sums are non returnable.

Standard Specifications for the Indiana East-West Toll Road $5.00
Plans, Special Provisions and Proposal Forms, per set, per Construction Section $25.00

INFORMATIONAL DRAWINGS

Cross Sections, per set, per construction section $25.00
Soil Plan and Profiles, per set, per construction section $5.00

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the contract documents.

Contractors statement for qualification on the forms supplied by the Commission will be required from all bidders.

East proposal must be accompanied by a Proposal Guaranty in the amount of five (5%) of the total price bid for the contract. The Proposal Guaranty shall be in the form of an acceptable surety bond or a certified check on a solvent bank.

If the bidder is an out of state corporation, he shall be required to furnish a certificate from the Secretary of State of Indiana as evidence that the corporation has complied with the Indiana Foreign Corporation Statutes, and that the corporation is authorized to transact business in the State of Indiana.

All bids must be received at or before 10:00 A. M. Central Standard Time August 17, 1955 in the offices of the Indiana Toll Commission, 309 W. Washington Street, Indianapolis, Indiana. At said hour, the bid box will be publicly opened and the bids read.

The award of the above Contract, if any award be made, will be to the bidders whose Proposal is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The commission reserves the right to reject any or all Proposals and to waive technicalities.

INDIANA TOLL ROAD COMMISSION
Dr. Dillon Geiger, Chairman
Charles W. Keating, Secretary-Treasurer

Bids: August 18, 1955

New Jersey Turnpike Authority

CONTRACT NO. N-55

Proposals are invited for Contract No. N-55 which involves the application of three (3) field coats of paint to the superstructure steelwork of the East Viaduct, extending from just west of Communipaw Avenue to just north of Grand Street, including a portion of the Ramp A and Ramp B Viaduct; of the West Viaduct, extending from just north of Grand Street to Second Street, including a portion of the Ramp A and Ramp B Viaduct; and of the North Terminal Ramps, extending from Second Street to the respective east abutments of the Northbound and Southbound Ramps between Coles Street and Jersey Avenue, and other incidental work, all in Jersey City, Hudson County, New Jersey, and all in connection with the construction of the Newark Bay-Hudson County Extension of the New Jersey Turnpike.

The approximate tonnage of superstructure steelwork that is to receive field coats of paint is 23,560 tons.

Proposals will be received at the New Jersey Turnpike Authority Administration Building, New Bruswick, New Jersey, until 11:00 O'Clock Eastern Daylight Saving Time, on the morning of August 18, 1955, at which time and place said proposals will be publicly opened and read.

Each bidder must submit with his proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after July 27, 1955, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. Contract documents will be furnished upon payment of Five Dollars ($5.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman
July 22, 1955

Bids: August 26, 1955

Proposal No. 647

THE PORT OF NEW YORK AUTHORITY
FIVE (5) GASOLINE DRIVEN EMERGENCY TRACTORS
LINCOLN TUNNEL

Sealed proposals for furnishing five (5) gasoline driven emergency tractors for use in the Lincoln Tunnel will be received at the office of the Director of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Ave., New York 11, until 11:00 A. M. (E.D.T.) on Friday, August 26, 1955, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase and Administrative Services.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

Bids: August 18, 1955

New Jersey Turnpike Authority

CONTRACT NO. N-54

Proposals are invited for Contract No. N-54 which involves the application of three (3) field coats of paint to the superstructure steelwork of the Southeast Viaduct, extending from the Bayonne Interchange (Avenue E) to the vicinity of Brown Place; of the five bridge structures extending from Linden Avenue to Phillip Street, namely, Linden Avenue Overpass, New York Port of Embarkation Overpass, Lehigh Valley Railroad Overpass, Ramp B & C Overpass and Central Railroad of New Jersey Overpass; and of the Bayview Viaduct, extending from the Jersey City Interchange (Caven Point Road) to Bayview Avenue; and other incidental work, all in Jersey City, Hudson County, New Jersey, and all in connection with the construction of the Newark Bay-Hudson County Extension of the New Jersey Turnpike.

The approximate tonnage of superstructure steelwork that is to receive field coats of paint is 12,452 tons.

Proposals will be received at the New Jersey Turnpike Authority, Administration Building, New Brunswick, New Jersey, until 11:00 O'Clock, Eastern Daylight Saving Time, on the morning of August 18, 1955, at which time and place said proposals will be publicly opened and read.

Each bidder must submit with his proposal a Contractor's Financial and Equipment Statement.

Contract documents may be examined during office hours after July 27, 1955, at the office of the Authority and at the office of the Consulting Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. Contract documents will be furnished upon payment of Five Dollars ($5.00) for each set, upon application to the Authority. Contract documents are not required to be returned and the payment will not be refunded.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast, Chairman
July 27, 1955

OFFICIAL PROPOSALS

Bids: August 11, 1955

Pennsylvania Turnpike Commission
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 10:00 a. m., Eastern Daylight Saving Time on 11 August 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

For the Construction of the Electrical System for the Utility Building and Toll Plaza at the following Interchanges:

Contract No.	Interchange	Connecting Route	County
550-C	Lansdale	Pa. 63	Montgomery
551-C	Quakertown	Pa. 663	Bucks

The work to be performed under each of the above contracts consists of the construction of Electrical System for the Utility Buildings and Toll Plazas and all work incident thereto at each of the interchanges. The Utility Buildings and Toll Plazas are to be constructed by others. Plumbing and Heating will be installed by others.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on and after 22 July 1955, at the offices of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania, at the Commission's field office in Conshohocken, Pennsylvania, 10th Avenue and Hallowell Street and at the Commission's field office in Lehighton, Blakeslee Boulevard, Lehighton, Pennsylvania.

Plans and Contract Documents for this contract may be obtained from the Commission upon deposit of Ten ($10.00) Dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of Five ($5.00) Dollars per copy.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer
Harrisburg, Pennsylvania

Bids: August 30, 1955

Contract HP-120.008

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
HOBOKEN-PORT AUTHORITY PIERS
PIER 3
REHABILITATION OF SUPERSTRUCTURE

Sealed proposals for the rehabilitation of the superstructure of Pier 3 at the Hoboken-Port Authority Piers, Hoboken, N. J., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, August 30, 1955, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman
New York, July 28, 1955

Bids: August 9, 1955

The Hydro-Electric Power Commission of Ontario

ST. LAWRENCE POWER PROJECT
POWERHOUSE HEADWORKS AND TAILRACE
STEEL CHECKS AND STEEL SILLS

SEALED TENDERS, in quadruplicate, addressed to the undersigned, 620 University Avenue, Toronto 2, Ontario, and clearly marked

"TENDER FOR ST. LAWRENCE POWER PROJECT
POWERHOUSE HEADWORKS AND TAILRACE
STEEL CHECKS AND STEEL SILLS"

will be received up to 4.30 o'clock p.m., Eastern Daylight Saving Time, on Tuesday, August 9, 1955, for the manufacture, fabrication, shop alignment, supply, and delivery of any or all of 1,500 tons of riveted steel checks, steel sills, anchor bolts, and tie bolts for the Canadian half of the powerhouse.

Delivery is to commence December 1, 1955, and is to continue at the rate of approximately 100 tons every two months.

Copies of the tendering documents may be obtained on or after July 15, 1955, at the office of the Director of Supply, 620 University Avenue, Toronto 2, Ontario.

Tendering documents may be inspected at the above location and at the offices of the following: the Commission's Field Office, Cornwall, Ontario; Power Authority of the State of New York, 270 Broadway, New York 7, New York; and Uhl, Hall and Rich, 230 Congress Street, Boston 10, Massachusetts.

The lowest or any tender will not necessarily be accepted.

E. B. Easson
SECRETARY

Bids: August 25, 1955

Refuse Incinerating Plant Extension
Arlington County, Va.

ADVERTISEMENT FOR BIDS

Sealed proposals for furnishing all materials and equipment and doing all work required for General Construction—Refuse Incinerating Plant Extension, as described below, will be received by the Purchasing Agent in Room 213, in the Court House Building at Arlington County, Virginia, until 11:00 A. M., Eastern Daylight Saving Time, on AUGUST 25, 1955, and there publicly opened and read immediately thereafter:

CONTRACT D.
GENERAL CONSTRUCTION—REFUSE INCINERATING PLANT EXTENSION:

1. Location: The work is located in Arlington County, Virginia at S. Eads Street and 31st Street S.
2. Type Of Work: The principal items of work include the following:
   Construction of an extension to the existing Refuse Incinerator Plant, including excavation, concrete and brick masonry, structural steel, miscellaneous piping and appurtenances, electrical work, paving, fencing, planting and grassing.
   Approximate quantities for the major items of the work are as follows:
   Excavation .....1000 Cu. Yds.
   Reinforced Concrete .....1500 Cu. Yds.
   Structural Steel .....200 Tons
   Superstructure Masonry 16,000 Cu. Ft.
   Roofing .....1100 Sq. Yds.
3. Copies of Plans and Specifications, Information for Bidders, Bid Forms and other bidding and contract documents may be examined at the Office of the Sanitary Engineer, Sanitation Division, County Court House, Arlington, Virginia; at Dodge Reports, 900 F. Street, N.W., Washington, D. C. and at the Office of Alexander Potter Associates, Consulting Engineers, 50 Church Street, New York 7, N. Y.
4. Copies of Plans, Specifications and Bidding Documents may be obtained from the Purchasing Agent in Room 213, Court House Building at Arlington, Virginia upon a Deposit of FORTY ($40.00) DOLLARS PER SET.
   Full refund will be made to actual bidders for return of One (1) Set, in good condition, within two weeks after closing date for receipt of bids; refund for return of all other sets, in good condition, within the same period, will be Fifty (50%) Percent of the Deposit. No refund will be made for return of documents in poor condition or later than the two week period stipulated.
   All bids must be on the form contained in the Contract and Specifications.
   Contractors, whether resident or non-resident in Virginia will be required to show evidence of a certificate of registration as required by Chapter 7 of Title 54 of the Code of Virginia before their Bids will be considered, if the Bid is $20,000 or more.
   All bids must be accompanied by a Certified Check or acceptable Bidder's Bond in an amount of not less than Five Per Cent (5%) of the amount of the Bid, made payable to the Treasurer of Arlington County, as bid security.
   The successful bidder will be required to furnish a Performance Bond conditioned upon the faithful performance of the contract, and upon payment of all persons supplying labor and furnishing materials on the construction of the work.
   No bidder may withdraw his Bid within Thirty (30) Days after actual date of opening thereof.
   The County Board of Arlington County, Virginia, reserves the right to reject any or all bids and to waive any informality in the bids.

ARLINGTON COUNTY, VIRGINIA
By: A. T. Lundberg
County Manager

Bids: August 11, 1955

Pennsylvania Turnpike Commission
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 10:00 a. m., Eastern Daylight Saving Time on 11 August 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

For the Construction of Plumbing System for the Utility Building and Toll Plaza at the following Interchanges:

Contract No.	Interchange	Connecting Route	County
550-A	Lansdale	Pa. 63	Montgomery
551-A	Quakertown	Pa. 663	Bucks

The work to be performed under each of the above contracts consists of the construction of the Plumbing System for the Utility Building and Toll Plaza and all work incident thereto at each of the Interchanges. The Utility Buildings and Toll Plazas are to be constructed by others. Heating and Electrical Work will be installed by others.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on and after 22 July 1955, at the offices of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania, at the Commission's field office in Conshohocken, Pennsylvania, 10th Avenue and Hallowell Street and at the Commission's field office in Lehighton, Blakeslee Boulevard, Lehighton, Pennsylvania.

Plans and Contract Documents for this contract may be obtained from the Commission upon deposit of Ten ($10.00) Dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of Five ($5.00) Dollars per copy.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer
Harrisburg, Pennsylvania

OFFICIAL PROPOSALS

Bids: August 11, 1955

New York State Bridge Authority

Advertisement for Proposals
for
Contract No. 3—Electrical Work
for
KINGSTON-RHINECLIFF BRIDGE
across Hudson River

The New York State Bridge Authority will receive sealed proposals for the furnishing of material and installation of the Electrical Work, Contract No. 3, of the Kingston-Rhinecliff Bridge over Hudson River until 2:00 P.M. Eastern Daylight Time, on the 11th day of August, 1955, at the office of the Authority, 22 Ferry Street, Kingston, New York, at which time and place proposals will be publicly opened and read aloud.

The work includes conduits, cables, and electrical equipment required for the roadway lighting, navigation lights, fog bell signal, and sound power telephone. The principal items of work include:

	Approximate Quantities
Lampposts with Mercury Vapor Luminaries	89 units
Conduits, Galvanized Steel 3 in. to 1 in.	24,000 ft.
Conduits, Galvanized W. I., 2 in. to 1 in.	23,000 ft.
R. I. N. C. Shielded Cable, 5000 Volt	8,000 ft.
R. I. N. C. Non-shielded Cable, 5000 Volt	70,000 ft.
R. I. N. C. Cable, 600 Volt	43,000 ft.

Furnishing and installing electrical equipment for transformer and switch room.

Plans, Specifications, and Proposal Form for the work are on file in the office of the New York State Bridge Authority and in the office of D. B. Steinman, Consulting Engineer, 117 Liberty Street, New York 6, N. Y., and may be inspected by prospective bidders during office hours.

Plans, Specifications, and Proposal Form may be obtained from D. B. Steinman, Consulting Engineer, 117 Liberty Street, New York 6, N. Y., upon application and deposit of $25.00. A refund of $25.00 shall be made to bidders and $15.00 to those not submitting bids provided plans and specifications are returned in good condition to D. B. Steinman not later than fourteen days after opening of the bids.

Bids must be made upon the proposal form included in the Contract Documents. Each proposal must be accompanied by draft or certified check payable to the order of the New York State Bridge Authority for the sum of thirty thousand dollars ($30,000.00).

The right is reserved to reject any or all bids.

NEW YORK STATE BRIDGE AUTHORITY
July 15, 1955 Robert Hoe, Chairman

Bids: August 11, 1955

Pennsylvania Turnpike Commission Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 10:00 a.m., Eastern Daylight Saving Time on 11 August 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

For the Construction of the Utility Building and Toll Plaza at the following Interchanges:

Contract No.	Interchange	Connecting Route	County
550	Lansdale	Pa. 63	Montgomery
551	Quakertown	Pa. 663	Bucks

The work to be performed under each of the above contracts consists of the construction of the Utility Building and Toll Plaza and all work incident thereto at each of the interchanges; not including, however, the Plumbing System, the Heating System, the Electrical Work or the Seeding and Sodding, except as noted in the specifications or as shown on the Contract Documents.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on and after 22 July 1955, at the offices of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania, at the Commission's field office in Conshohocken, Pennsylvania, 10th Avenue and Hallowell Street and at the Commission's field office in Lehighton, Blakeslee Boulevard, Lehighton, Pennsylvania.

Plans and Contract Documents for this contract may be obtained from the Commission upon deposit of Ten ($10.00) Dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of Five ($5.00) Dollars per copy.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania

Bids: August 9, 1955

State of New Jersey State Highway Department Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

BRASS CASTLE ROAD

Construction of Brass Castle Road from State Highway Route 24 to Hartman's Corner, Washington Township, Warren County, Federal Aid Secondary Project No. S-205(1). Length 2.178 miles. The principal items of work are:

Estimated:
7,125 cu. yds. Roadway Excavation, Unclassified
33,716 sq. yds. 6" Gravel Base Course
31,700 sq. yds. 3" Modified Penetration Macadam
78,004 gals. Bituminous Material
2,595 tons Bituminous Concrete

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Tuesday, August 9, 1955, at NINE o'clock (9:00 A. M.—EASTERN STANDARD TIME), TEN o'clock (10:00 A. M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Secondary Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P.L. 413, 82nd Congress, and is to be performed in accordance with the "Required Provisions—Federal Aid—Contracts" of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications. The attention of the bidders is ddirected to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of FIFTEEN DOLLARS ($15.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00; (2) a proposal bond for a sum of not less than fifty percent (50%) of the total price bid for the project; (3) a financial statement (Part 1 of the Prequalification Questionnaire); (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit executed in duplicate; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Bids: August 16, 1955

Pennsylvania Turnpike Commission Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 A. M., Eastern Daylight Saving Time, the 16th day of August 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract:

For the construction of North and South Portal Buildings and adjacent Cut and Cover Tunnel Sections to the Rock Portals of the T. J. Evans Tunnel, Contract 518-A, part of the Northeastern Extension of the Pennsylvania Turnpike in Lehigh and Carbon Counties, Commonwealth of Pennsylvania, the project being situated as follows:

The South Portal Building and adjacent Cut and Cover Tunnel Section is approximately 2,703 lineal feet northwest of the center line of Legislative Route 39119 between Turnpike Stations 1342+50 and 1343 +76.31 in Washington Township, Lehigh County, and the North Portal Building and adjacent Cut and Cover Tunnel Section is approximately 4,582 lineal feet southeast of the center line intersection of the Turnpike and the Lehigh and New England Railroad between Turnpike Stations 1384+ 77.20 and 1385+91.69 in East Penn Township, Carbon County.

Bids are to be submitted on a lump sum basis.

Copies of plans, specifications and other contract documents, are on file and open to public inspection at the office of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania on July 29, 1955. Plans, specifications and other contract documents will be available by this date for inspection or for mailing to prospective bidders. Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy.

Plans and contract documents for this section, exclusive of specifications, may be purchased from the Pennsylvania Turnpike Commission for the sum of twenty-five (25) dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Remittances are payable by check or P.O. Money Order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents, and cross-sections.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer

Harrisburg, Pennsylvania
19 July 1955

OFFICIAL PROPOSALS

Bids: August 9, 1955

State of New Jersey
State Highway Department
Trenton

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:
ROUTE 43 (1927), SECTION 11E, ROUTE U. S. 30 (1953)

Route 43 (1927), Section 11E, Route U. S. 30 (1953), Intersection Revision at Ancora, including Approach Road to Ancora Hospital, Winslow Township, Camden County, Length of Project 2.096 Miles. The principal items of work are:

3,321 cu. yds. Roadway Excavation, Earth
1,817 cu. yds. Wet Excavation
23,442 cu. yds. Borrow Excavation
1,167 cu. yds. Subbase
39,864 sq. yds. Gravel Base Course, 8" Thick
13,400 sq. yds. Penetration Gravel Surface Course, 2" Thick
26,628 sq. yds. Pavement Type MA-BC-1, 2" Thick
492 l.f. Corrugated Metal Pipe
1,211 l.f. White Concrete Curb
1,325 l.f. Wire Rope Fence

Bids for the above will be received at the office of the State Highway Department, in the CAFETERIA, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Tuesday, August 9, 1955, at NINE o'clock (9:00 A.M.-EASTERN STANDARD TIME), TEN o'clock (10:00 A.M.-DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plan and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans and supplementary specifications will be furnished upon payment of a fee of FIFTEEN DOLLARS ($15.00) for each set upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., with a check drawn to the order of the State Highway Department. A charge of $5.00 will be made for supplementary specifications unaccompanied by construction plans. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by the following documents: (1) a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00; (2) a proposal bond for a sum of not less than fifty percent (50%) of the total price bid for the project; (3) a financial statement (Part I of the Prequalification Questionnaire) (4) a plan and equipment statement (Part 3 of the Prequalification Questionnaire); and (5) a Non-collusion Affidavit executed in duplicate; and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed:
STATE HIGHWAY DEPARTMENT
A. Lee Grover, Chief Clerk

Contractors Watch This Section—

for new projects. Publish your announcements through the proposal sections of *Engineering News-Record* and get their bids.

OFFICIAL PROPOSALS

COMMONWEALTH OF MASSACHUSETTS. Department of Public Works. NOTICE TO CONTRACTORS: Sealed proposals for the Tunnel, North Approach thereto, and Miscellaneous Work for the John F. Fitzgerald Expressway between Oliver Street and Kneeland Street (Contract KL) in the City of Boston, will be received at Room 427, 100 Nashua Street, Boston, Mass., until 2:00 P.M. (DST) of Tuesday, August 23, 1955, and at that place and time publicly opened and read. Copies of sub-bids shall be filed by subcontractors and shall be in the possession of the Department at the above address before 2:00 P.M. (DST) of Thursday, August 18, 1955. Charge for plans and proposal forms: $75.00, amount returnable only to bidders. Certified checks required for proposal guaranties: General, $250,000; Heating and Ventilating, $1000; Roofing and Flashing, Painting, Plumbing, and Electrical, $250. each. Complete information at said office; plans on display at District offices. Minimum wage and dump-truck rates have been established. The bids shall be prepared and considered and the contract awarded in accordance with the provisions of Chapter 480 of the Acts of 1939 as amended by Chapter 699 of the Acts of 1941. Right reserved to waive any informality in or reject any or all proposals. An award will not be made to a Contractor who is not equipped to undertake and complete the work as specified. By: JOHN A. VOLPE, Commissioner of Public Works. July 16, 1955.

Bids: August 11, 1955

Pennsylvania Turnpike Commission
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania until 10:00 a.m., Eastern Daylight Saving Time on 11 August 1955, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania and publicly opened and read aloud for the following contracts:

For the Construction of Heating System for the Utility Building and Toll Plaza at the following Interchanges:

Contract No.	Interchange	Connecting Route	County
550-B	Lansdale	Pa. 63	Montgomery
551-B	Quakertown	Pa. 663	Bucks

The work to be performed under each of the above contracts consists of the Construction of Heating System for the Utility Building and Toll Plaza and all work incident thereto at each of the Interchanges. The Utility Buildings and Toll Plazas are to be constructed by others. Plumbing and Electrical Work will be installed by others.

Copies of plans, specifications and Contract Documents are on file and open to public inspection on and after 22 July 1955, at the offices of the Pennsylvania Turnpike Commission in Harrisburg, Pennsylvania, at the Commission's field office in Conshohocken, Pennsylvania, 10th Avenue and Hallowell Street and at the Commission's field office in Lehighton, Blakeslee Boulevard, Lehighton, Pennsylvania.

Plans and Contract Documents for this contract may be obtained from the Commission upon deposit of Ten ($10.00) Dollars for each set. No refund will be made for plans returned unless the project is withdrawn from letting by the Pennsylvania Turnpike Commission.

Copies of Specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of Five ($5.00) Dollars per copy.

Remittances are payable by check or P. O. money order to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications and contract documents.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
James F. Torrance
Secretary and Treasurer
Harrisburg, Pennsylvania

OFFICIAL PROPOSALS

Bids: August 11, 1955

Contract O & M-327

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
NEWARK AIRPORT
BREWSTER HANGAR (BLDG. 55)
REHABILITATION OF HEATING EQUIPMENT

Sealed proposals for rehabilitation of heating systems at the Brewster Hangar, Newark Airport, Newport, N. J., will be received at the office of the Department of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Ave., New York 11, until 11 A. M., Thursday, August 11, 1955, at which time and place said proposals will be opened and read.

Contract documents may be seen at the Office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Dept., Room 1001, where a receipt in duplicate will be issued. The duplicate copy of the receipt is then to be delivered to the Department of Purchase and Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, July 28, 1955

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4471) will be received at Glendo, Wyoming, until August 24, 1955, for furnishing labor and materials for earthwork and structures for relocation and grade raises—Chicago, Burlington and Quincy Railroad—Glendo Dam and Reservoir, Glendo Unit, Oregon Trail Division, Missouri River Basin Project, Wyoming. Location near Glendo, Wyoming in Platte and Converse Counties. Principal items are excavation, 970,000 cu. yds.; overhaul, 96,000 mile cu. yds.; driving concrete piles, 7,880 lin. ft.; and other work. The work is divided into two schedules. Completion time 390 days. For particulars, address Bureau of Reclamation, P. O. Box 127, Glendo, Wyoming; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4474) will be received at Fargo, North Dakota, until August 30, 1955, for furnishing labor and materials for Ellendale Substation and modifications at Jamestown Substation, Transmission Division, North Dakota, Missouri River Basin Project. Location near Ellendale and Jamestown, North Dakota. Principal items are 1010 cu. yds. excavation; 110 cu. yds. concrete; lump sum constructing service building; 60,000 pounds furnishing and placing reinforcement bars and fabric; 7 transformers, installing transformers; and other work. Completion time 275 days. For particulars, address Bureau of Reclamation, P. O. Box 2130, Billings, Montana; or P. O. Box 1993, Fargo, North Dakota; or Building 53, Denver Federal Center, Denver, Colorado. W. A. Dexheimer, Commissioner.

Department of Commerce, Bureau of Public Roads, July 13, 1955. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., D.S.T., AUGUST 11, 1955, for Project 1A2, Colonial Parkway, York County, Virginia. Construction of Brick-faced Concrete Arch Bridge under Virginia Route 238 and approaches. Length: 0.169 mile. The approximate quantities of the more important items are: 27,640 cu. yd. Excavation, 1,036 cu. yd. Concrete, 120,050 lb. Reinforcing Steel, 2,200 tons Crushed Stone or Crushed Gravel, 230 cu. yd. Brick Masonry, and 10,000 lin. ft. Treated Timber Piling. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above or Bureau of Public Roads, 920 South Jefferson Street, Roanoke, Virginia. H. J. Spelman, Division Engineer.

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities....
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

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The advertising rate is $24.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

$1.80 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

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Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW ADS to ENGINEERING NEWS RECORD, 330 W. 42nd St., N. Y. 36, N. Y. for August 18th issue closing August 8th

ENGINEERS AND DRAFTSMEN

OVERSEAS AIR BASE

DESIGN ENGINEERS
Degree plus Minimum 6 years exp.

DRAFTSMEN
Minimum 4 years experience

1 YEAR CONTRACT PLUS SINGLE STATUS

Send complete resume to

EDW M. VAUGHN, N. Y.
Representative
WYATT C. HEDRICK
Architect Engineer
346 BROADWAY, NYC 13, NY

CHALLENGING POSITION

Expanding prestressed concrete operation needs capable Designer-Engineer. Must be able to show results. Resume in first reply.

P-6954, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

Sales Engineers

A major steel company has need for sales engineers in its rapidly expanding prefabricated steel building division. Excellent opportunities for men 25 to 30 years old with engineering background and a desire for sales work. Attractive starting salary with company car, expenses and bonus plan. Openings in Baltimore, Philadelphia and Pittsburgh.

P-6903, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ASPHALT PLANT EXPERT

for Sales and Service Work

Large manufacturer of asphalt plants requires man for sales and service work on East coast. Man must be well experienced with asphalt plants from both the sales and technical angle. Salary commensurate with ability.

P-7176, Engineering News-Record
1111 Wilshire Blvd., Los Angeles, Calif.

ESTIMATOR WANTED

Western Pennsylvania contractor has opening for an estimator with ability to price shafts, tunnels, dams, bridges, foundations, and other heavy construction. Applicant should be under 40 years of age with experience on heavy construction work of magnitude, and must have actually prepared estimates of cost, and be able to supervise an estimating department. Replies will be acknowledged.

P-7166, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Estimator, for firm doing extensive sewer, watermain, treatment plant, heavy construction. Must be graduate engineer or have extensive engineering background, with ability to obtain price and job information. Permanent position for qualified applicant. P-6074, Engineering News-Record.

Construction Foreman for firm engaged in extensive sewer, water main and treatment plant facilities. Permanent position in N. Y. State area. Only qualified applicants with broad experience. P-6595, Engineering News-Record.

Wanted: Instructor in engineering drawing and descriptive geometry. Salary $3600 for 9 month period. Dept. of Engr. Drawing, University of North Dakota, Grand Forks, North Dakota.

Engineer—Experienced in bridge and general marine construction. Salary open. Address reply to P. O. Box 647, Savannah, Georgia.

Project Superintendent — Experienced in bridge and general marine construction. Salary open. Address reply to P. O. Box 647, Savannah, Georgia.

Help Wanted—Male structural steel detailers experienced, first class, permanent position—excellent opportunity—Box 955, New Haven, Conn.

Help Wanted—Male experienced graduate engineer for structural steel take-off and estimating—Box 955, New Haven, Conn. Will also consider application of recent graduate.

Civil Engineer—Surveyor in established business, knowledge of land planning and subdivision calculations essential. Reply 3 Northwest Street, Annapolis, Maryland.

Assistant Engineers, civil engineering background. Training and experience in one or more of the following: design of subdivisions, sewers, water mains, streets, etc. for career positions in consulting engineer's office. Salary open. State education, experience, salary requirements and give references. Lester V. Johnson Associates 2309 Wilson Boulevard Arlington, Virginia.

Manager for a Midwest Construction Company in a City of approximately 100,000, doing municipal, industrial, highway grading and concrete work, and private work. Must be good organizer and pusher. Excellent opportunity for the right man. P-7111, Engineering News-Record.

Engineers—Experienced in design and preparation of plans for water works and sewerage systems and structural design. Advise education, experience, salary requirements and when available. Location Eastern New York. Reply P-7171, Engineering News-Record.

POSITIONS VACANT

Architect—Qualified through training and experience to design churches, schools and other buildings. Give full information as to education, experience, salary requirements and when available. Location Eastern New York. P-7172, Engineering News-Record.

Land surveyor for office work. Experience in deed research, setting boundaries, and coordinate computations required. Salary open. Norman T. Riffe, civil engineer. 1125 Pine St., Martinez, California.

Wanted: Instructor and Half-time graduate assistants in engineering drawing and/or mechanics subjects. Opportunity to earn advanced degrees. Write: Head, Department of Civil Engineering, Lehigh University, Bethlehem, Pennsylvania.

Wanted—Reinforcing steel detailer and estimator. Good opportunity for advancement with young fast growing fabricator. Excellent salary for right man. Write or phone 7741 collect. Brocker Mfg. & Supply Co., York, Pa.

Supt.—Foreman aggressive experienced in schools, stores, industrial const. work. Long established firm in Illinois. Chance for advancement or firm participation. P-7178, Engineering News-Record.

Construction Foreman for firm doing pile bridges, culverts, formed concrete foundations, concrete slab work. Permanent position with aggressive central Illinois firm. P-7179, Engineering News-Record.

Wanted—A prospective V.P.—Construction with experience on heavy construction, particularly on concrete and especially familiar with the economics of equipment applications. Located in the N. Y. metropolitan district, occasional 3 or 4 day trips are necessary. The man we want must be energetic, ingenious and able to get along with people. Prefer experience as asst. supt. or asst. chief engr. on diversified heavy construction. Please send complete resume which will be kept confidential. P-7148, Engineering News-Record.

Construction Superintendent who has specialized on the placing of concrete. For a man who is thoroughly familiar with concrete plant, concrete, and form costs, etc., we have an exceptional opportunity. Give full particulars of experience and education. P-7147, Engineering News-Record.

Instructors and Assistant Professors in surveying, engineering mechanics, and fluid mechanics, wanted by university in Southeast. Instructors with B.S. will have opportunity to work for M.S. while receiving full compensation. Salary commensurate with education and experience. Positions start September 1955. P-7146, Engineering News-Record.

Construction Superintendent for general contractor in Mid-Hudson Valley area. Buildings, public works and commercial. Write giving resume of experience and salary requirements to P-7169, Engineering News-Record.

Engineer-Superintendent for concrete paving on roads, airports, etc. Must be graduate engineer between 30-40 years old who has been actively engaged in actually doing this type of work for at least the last five years in this capacity. This is a permanent position with a substantial company in New York State. This opening has a real future for the right man. Salary open. P-7108, Engineering News-Record.

(Continued on opposite page)

ENGINEERS — DESIGNERS

Chemical - Mechanical - Electrical - Structural - Piping

San Francisco assignment

Recent design experience on petroleum refineries, chemical plants, or related projects. Compensation commensurate with ability. Liberal moving allowances.

Please write furnishing complete chronological experience record and salary history, also full details regarding education, salary desired, businesss and character references.

BECHTEL CORPORATION

220 Bush Street — **San Francisco 4, Calif.**

POSITIONS VACANT

(Continued from opposite page)

Sanitary Engineer. Graduate engineer with broad and recent water works and sewerage design experience for consultant's office located in Ohio. Permanent position intended. Write fully regarding experience, age and ability to manage engineering personnel. Salary open. P-7184, Engineering News-Record.

POSITIONS WANTED

Heavy Construction Manager. Thoroughly qualified in field, and office 26 years experience hydro, and steam plants, dams, tunnels and airbases. Construction wide, and cost-conscious now employed. Have had foreign experience. PW-7126, Engineering News-Record.

Project Manager or Superintendent. Graduate Engineer, young, aggressive, thoroughly experienced and capable of organizing and directing the estimating, bidding, buying and field construction of heavy industrial or chemical projects. Have following of craft and field supervision. Presently employed as gen. field supt. on chemical project in Southeast. Available Sept. 1st. PW-7113, Engineering News-Record.

Contractor's Chief Estimator—30 years top flight competitive experience. Assume full responsibility for bid preparation and usual chief engineer functions. Open for attractive proposition requiring thoroughly qualified man. PW-7115, Engineering News-Record.

Cost estimator, ten years exper. heavy const. including highways, bridges, drainage, piers. P.E., 34, with experience in office as chief engineer and field as project manager. N. Y. city vicinity. PW-7167, Engineering News-Record.

Construction Estimator — specifications writer, 20 years experience heavy industrial, institutional and military. Successfully completed three foreign contracts South America and South Pacific. Interested in foreign assignment. Sober, reliable age 40. PW-7155, Engineering News-Record.

Estimator: 5 years experience with general contractor in field and office on commercial and industrial work. Now working in western state. PW-7156, Engineering News-Record.

Architectural engineer grad. in Germany, lang. Engl., Germ. French, age 36 exp. 4 years arch. drafting and designing, 4 years estimating commerc. & indust. field. Would relocate, prefer estimating, office engineering & supervision. Available Oct. 1st or earlier. PW-7118, Engineering News-Record.

Engineer, B.S. in C.E. with 3 years experience in structural design of concrete and steel bridges, including box girders and continuous spans, seeks employment in design, construction or sales. Available Sept. 1st. South, Southwest or Midwest preferred. PW-7157, Engineering News-Record.

Graduate Civil Engineer—28—Iowa Reg. P. E. Family man—1 year land surveying—2½ years highway and R.R. const.—2 years highway and expressway design. Desire resp. pos. west of Chicago. PW-7183, Engineering News-Record.

PART TIME WORK WANTED

Municipal Engineer and land surveyor, N. J. license, wishes part time work in N. J. municipality under direction of their engineer. 25 yrs. experience municipal, railroad, waterfront improvements, power plants and heavy construction. Both field and office. PTWW-7105, Engineering News-Record.

SELLING OPPORTUNITY WANTED

National sales organization wants additional line of products to sell heavy equipment operators and dealers. Reply SA-7177, Engineering News-Record.

ENGINEERS

Layout Work—Steel Mill
Highway Engineers
for Outside Positions

Vacation, Sick Leave, Hospitalization Insurance Paid. Monthly Salary with Overtime. Positions for Regular Staff not Single Project.

P-7073, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

DESIGN ENGINEERS

Graduate civil engineers for design of oil refinery plant facilities. Prefer men having professional engineer's license. Applicants must have a minimum of 4 years experience in design plus familiarity with drafting room procedures. These are career positions. Salaries commensurate with ability and experience. Liberal employee benefits. Plant located in Baltimore, Maryland.

Write Giving Resume' of Experience and Education

ESSO STANDARD OIL COMPANY
Box 5197, Highlandtown Sta.
Baltimore 24, Maryland

Estimator Wanted

Commercial and Industrial Construction

Must be experienced and fast in take-off and good knowledge of cost analysis. Unusual opportunity for ambitious young man to associate with a firm of established contractors on a good salary and percentage basis. Graduate engineer under 45 preferred.

P-7062, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

STRUCTUAL ENGINEERS

Engineering degree and responsible experience of at least three years in structural steel and reinforced concrete on bridges, buildings or heavy structures.

For established engineering consultants with international operations, located on gulf coast.

Send complete resume with name, address, and three references and salary requirements to:

P-7087, Engineering News-Record
330 W. 42nd St., New York 36, N. Y.

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Permanent opportunities for qualified engineers at the Cleveland, Ohio office of an engineering firm having over 50 years of successful operation doing business all over the world. Experience in design of:

STRUCTURAL STEEL
REINFORCED CONCRETE
HEAVY MACHINES
PIPING
PROCESS HEATERS

Applicable to design of blast furnaces, ore beneficiation plants, oil refineries, petro-chemical plants and similar heavy structures.

TOP COMPENSATION COMMENSURATE WITH EXPERIENCE AND ABILITY

PENSION PLAN
MANY OTHER BENEFITS
NO AGE LIMITATION

Please Contact or Write:

Edward A. Kolner

ARTHUR G. McKEE & CO.
2300 Chester Ave. Cleveland 1, Ohio

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Graduate Chemical, Mechanical, and Electrical Engineers with minimum of 5 years' experience. For specialized assignments commensurate with qualifications in various phases of project and process engineering. Write giving full particulars regarding personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 30

ARABIAN AMERICAN OIL COMPANY
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With municipal experience on sewers and pavements to serve as chief of party. Permanent position under civil service with retirement plan.

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City Hall, Royal Oak, Michigan

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A rapidly expanding organization devoted exclusively to highway engineering has openings at all levels for men experienced in the design of highways, freeways, expressways and associated work.

Work is in air-conditioned St. Louis office on long-term projects, with ample opportunity for professional development and advancement.

Assistance with moving expenses, excellent employee benefit and retirement plan, Blue Cross, paid vacations and holidays and sick leave.

Please send complete experience record, references, date available and salary desired in first letter.

SVERDRUP & PARCEL ENGINEERING COMPANY
1134 Locust St. St. Louis 1, Mo.

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(Classified Advertising)

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BOX NUMBERS count as one line additional in undisplayed ads.
DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED

The advertising rate is $20.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.
EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y. for August 18th issue closing August 8th

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

BUSINESS OPPORTUNITIES

Wanted to buy surveying and mapping business. BO-6792, Engineering News-Record, 520 N. Michigan Avenue, Chicago 11, Illinois.

CONSTRUCTION BOOKLET

For planning and construction estimates by engineers and contractors. Copyrighted booklet of basic formula and sample charts for rapid and accurate estimating of grading quantities for highways, railroads, canals, dams, etc. Based on many years of actual experience. $3.00 per copy, postpaid. Send orders to D. Misz, 140 E. 63rd St., N.Y.C. 21.

PARTNER WANTED

Well-known prestressed Concrete Engineer seeks partner for moderate size concrete construction contracts in metro New York area. Must be able to mobilize reliable crew for handling small concrete jobs profitably and expeditiously. Some capital desirable. Promising future for right man.

BO-7128, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

CRANES—WANTED

WHIRLEY—GANTRY
LOCOMOTIVE—CRAWLER
(Gas — Steam — Diesel)
also: O.E.T. (BRIDGE) Cranes
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LOW COST INSTALLATION AND OPERATION

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IMMEDIATE SHIPMENT
ELECTRIC, STEAM OR DIESEL
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SELL, RENT OR BUY

FOR DAMS, BRIDGES, BREAKWATERS, FILTRATION AND SEWERAGE PLANTS

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Volts	208-120
R.P.M.	300
Phase	3—Cycle 60

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MICHIGAN Model C-16 on Crawlers.
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210 cu. ft. LeRoi Air Compressor, chassis mounted on rubber tires.

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FS-7174, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

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FOR SALE

BUCYRUS-ERIE DRAGLINE model 9W 8 yd. bucket, with 200' boom

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CONSTRUCTION EQUIPMENT
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Phone—Gladstone 5-4041 or 5-0253

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1948 Erie Strayer Portable 1 cu. yd. Concrete Mixing Plant with elevator and ramps. Good working condition. Price cheap for quick sale.

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Caterpillar D17000 Diesel Engine 160 HP.
100 HP Jaeger 3D Gas Hoists. NEW.
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7 yd Page 6215 Diesel-Elec. Walker Dragline.
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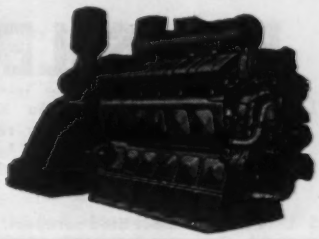

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1136	Fairbanks Morse	38D	1600	720	300	Fairbanks Morse	32E14	450	300
1100	General Motors	16-278A	1600	720	300	General Motors	8-268A	450	1200
1000	General Motors	16-567B	1440	720	250	Clark	GD-4	375	360
750	General Motors	12-567	1080	720	200	General Motors	8-268A	350	900
700	Worthington	EE-8	1000	327	175	General Motors	12-71	275	1800
675	Fairbanks Morse	38D	960	720	150	Buckeye	80	240	600
500	General Motors	8-567	720	720	148	Fairbanks Morse	32E14	220	300
500	Alco	6-12 x13T	750	600	100	General Motors	3-268A	150	1200
350	Baldwin	VO-6	510	450	60	General Motors	6-71	90	1200
320	Enterprise	DSG-6	460	450					

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REX PUMPCRETES AVAILABLE

2 Model 200 Double — all selective drive
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1 Mile 8" OD pipe; 6" and 8" valves, bends and fittings.

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Two—25 Ton 3 Sheave Steel Stiff-leg Derricks 38' Mast 85' Boom & Bull Wheels
PRICE $2500. EACH

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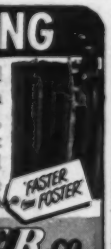

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EDITORIALS

Time for Reclassification?

THE RECURRING JURISDICTIONAL BATTLES within the construction industry bring to light one cardinal fact:

It is not the skill that's involved that causes the battle—it is the material itself.

And that leads logically to an extremely important point: Hasn't the time arrived for a careful, honest, soul-searching reclassification of the construction trades?

Take, for example, the case of certain wall panel and roofing material just coming on the market. In New York State there have been a number of jurisdictional disputes over the installation: Should carpenters, cement masons, ironworkers or roofers do this work?

At first glance, the carpenter can make out a case for himself. The new material is often partly of wood, it is cut by power saws, joined much like wood. A mason can make a similar case: The material may include cement or some rock product, or, even though the base is wood, it is bound together into a board by cement—hence, isn't it more properly classified as a stone product? The ironworkers have still another angle: The material is often handled in the same manner as light steel or steel panels, joined with patented connectors that often are a part of steel work.

And then, of course, the roofers' union claims that if the material is used for roofing, it's roofer's work, regardless of composition of the panel itself.

This problem is endlessly repeated in construction, as technology and technique advance: Why should the carpenter handle metal kitchen cabinets, when they're made by sheet-metal workers? Why must it be a metal lather who installs reinforcing bars, and not an ironworker? Why shouldn't a branch of the carpenter unions (the dockbuilders) handle prestressed concrete members for a pier—and what right, other than custom, have the ironworkers to claim such work?

The answer is very clear. The building trades as they are now constituted date back to the beginning of civilization for the definitions of their work: Anything of wood is carpenter work; anything of stone belongs to the mason; anything of metal to the metal-working trades.

But now come materials that cannot be defined that narrowly—that are neither wood nor metal nor stone, but may be all three, or may be something else entirely—as the plastics. And now come methods that won't permit one trade at a time to work, but must make use of several, or even brand new trades.

Isn't the final answer a re-definition of the trades and of the skills that are required? Why not take a dispassionate look at what's required of construction labor, and divide it according to how it's used rather than by tradition?

To save itself endless wrangling, hold its prices in line, and to make full use of new methods and materials as they come along, the construction industry ought to study this problem seriously.

The leaders of the nearly 4,000,000 men who constitute construction's labor force have often showed themselves to be responsible men, with concern for the industry as well as for the very real human needs of their members. These leaders should take the initiative in calling a meeting with management and professional groups to consider meshing the archaic trades setup with the realities of present day construction.

Silver Linings Galore

CANCELLATION OF THE CONTRACT of the Dixon-Yates utility interests to build a power plant in response to Atomic Energy Commission needs has brought expressions of happiness from a surprising number of people. Public power proponents see in the cancellation of the private power contract a victory for their side. Private power proponents express satisfaction that TVA expansion was avoided. The Republicans are glad that the issue was disposed of so far in advance of next year's elections. Senator Kefauver seems happy in having something left to investigate. And the Administration seems quite satisfied to transfer the financing and building of the plant to the city of Memphis.

Some of the other interests concerned can also find a bright side to the picture. AEC, for example, is promised the power it needs, TVA to supply it by cutting the city of Memphis from its lines. TVA might seem to lack a cause for happiness, yet serving Memphis may have been uneconomic since it is the customer farthest from TVA's center of power generation. Even the Dixon-Yates group is not without a small cause for happiness since it will no doubt be compensated for its loss of the contract.

Whether Memphis will be happy over the outcome is yet to be determined. Up to the present, its officials have been able to bask in the glory of having thwarted an invasion of private power, but their satisfaction is subject to some dimming by the responsibilities of financing and building a $100 million-power plant. Presumably AEC has a rather rigid limit on the time when it needs more power from the TVA so that with the time now lost through cancellation of the Dixon-Yates contract Memphis may face a rush job on its power plant.

Its power-purchase contract with TVA, however, does not run out until June 30, 1958 so that it has nearly three years to ready its own power installation. This is none too long, but with fast financing, design and construction the job can be done.

And success on this score would bring the construction industry in for its share of the general happiness along with now doubtful Memphis.

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PHOTOGRAPHS

(1) Compacted layer of coarse broken stone, ready for application of asphalt, in construction of Texaco Asphalt Macadam pavement.

(2) Applying hot Texaco Asphalt Cement to broken stone at the rate of 1.75 gallons per square yard.

(3) Spreading small stone to fill the voids in layer of large stone, following applications of asphalt.

(4) Pressure distributor applies one of the two asphalt seal coats used in Asphalt Macadam construction.

(5) Completed Texaco Asphalt Macadam pavement on this Pennsylvania highway, which is ready for traffic immediately.

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